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Original Articles

THE PATHOLOGIC FINDINGS IN TWO FATAL CASES OF MYCOSIS FUNGOIDES.*

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The lack of agreement on the part of many writers as to the etiology and pathology of mycosis fungoides has led to a careful study of two cases observed at the Boston City Hospital and to the following report of this investigation.

Three main theories have been advanced concerning the type of changes taking place in the skin. First, the skin tumors have been regarded by many authors, including Köbner,[1] Virchow,[2] Payne,[3] DeAmicis,[4] Stelwagon and Hatch,[5] Krasnoglasow,[6] Auspitz,[7] Phillipson,[8] Hyde and Montgomery,[9] Hochsinger and Schiff,[10] as granulomata, either infectious or non-infectious. Second, Kaposi,[11] Funk,[12] Crocker,[13] Ranvier,[14] Pinkus,[15] Lerrede and Weil,[16] Besnier[17] and others believe the tumors to be sarcomata. This view is largely supported by the German writers. A third group (Pellagotti,[18] Landouzy,[19] Debove,[20] Demange,[21] Gaillard,[22] Tanturri[23]) regard the disease as a cutaneous localization of a leukemic process, a view first suggested by Gillot[24] and supported later mainly by the French and Italian authors. Biesiadecki,[25] Phillipert[26] and Kaposi each report a case of mycosis fungoides associated with leukemia.

Ullmann[27] places the tumors in an intermediate position between granulation tissue and sarcoma. Two of the most recent writers, Wolters[28] and Joseph,[29] regard mycosis fungoides as a chronic general disease, caused by an infection, and first localized in the skin. They further separate leukemia and pseudoleukemia from this disease, but consider them all to be of similar origin.

The literature contains five cases with visceral involvement. Duhring[30] and Gaillard each report a case with a nodule in the wall of the bladder, but give no proof of any definite relation between the two processes. In two other cases examined by Lerrede and Weil were found lymphadenomata, one of the liver and one of the kidney. Bowen[31] in his case describes an identical histologic picture in the tumors of the skin and nodules in the testes, one kidney and the mesocolon.

Many reports have been made of the finding of microorganisms in the blood vessels and affected skin, and by some these are believed to have an etiologic bearing. These are most commonly accepted, however, as secondary invaders. Animal inoculations have in all instances yielded negative results. Observations on the histologic structure of the tumors are fairly uniform and may be briefly stated as consisting of a fine reticulum in which lie small round cells of the lymphocyte series. Wolters, Stelwagon,[32] Pellagotti and others consider the tumor cells to be lymphocytes. Kaposi and the writers who accept his view think them sarcoma cells of the small round type, while a third group, including Joseph, Paltauf,[33] Vollmer,[34] Ullmann, Krasnoglasow and others hold that they originate from the connective tissue cells of the corium. Practically all authors concur in reporting mitoses as very frequent. On the occurrence of other cells and structures there is less agreement. Unna,[35] Lerrede and Weil, Wolters and others have found plasma cells in large numbers, while Joseph and Ullmann report negative findings.

Wolters says that the occurrence of giant cells is not uniform, being present in large numbers in some cases and entirely absent in others. Vollmer claims that their presence depends on the age of the lesion, i. e., that they are found only in the late tumors and during resolution. Payne, Ullmann and Krasnoglasow claim that there is an absolute increase, by new formation, in the blood vessels of the affected part. Wolters finds an increase in capillaries only and considers this as purely secondary to the tumor growth.

The presence of elastic fibers in the tumors has been advanced by Joseph as evidence against the theory of a new growth.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Laboratory of the Boston City Hospital.

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28. Bibliotheca Med., division D, ii, No. 7, Stuttgart, 1899.
29. Arch. f. Derm. u. Syph., xlvi, No. 2; Arch. Ergänzungsband, 1900, p. 183 (Kaposi's Festschr.).
30. Jour. Cut. and Genitourinary Dis., Sept., 1898, p. 423.
31. Jour. Cut. Dis., 1897, p. 65.
32. "Diseases of the Skin," 1902, p. 827.
33. II. Internat. Derm. Cong., Wien., 1893; also, Lubarsch Ostertags Ergebn., 1895, ii.
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35. "Histopathology of the Skin," 1896, p. 507.

The position of the infiltrate immediately beneath the Malpighian layer of the skin without the interposition of a connective tissue layer is mentioned by Kaposi, Joseph and others.

CASE 1.—*History.*—Man, aged 40, entered Boston City Hospital, Aug. 15, 1905, in the service of Dr. Henry Jackson.

Family history and past history was good. He denies venereal infection.

Present Illness.—Indefinite history of a preceding eczematous condition. Three months previous to admission a small papule appeared on abdomen in left iliac region accompanied by intense itching. Similar lesions appeared in scattered distribution, growing rapidly in size and developing into tumors varying from the size of a pea to that of an orange. There was some ulceration of the larger tumors and a marked tendency to disappearance and reappearance.

Examination.—Physical examination revealed nothing abnormal in the internal viscera. Lymph glands were not enlarged. There was no constitutional disturbance until two weeks before death when symptoms of sepsis were manifest. Toward the end the skin lesions gradually diminished in size, the smaller disappearing entirely and the larger shrinking very markedly, until at the time of death only one well-defined tumor mass remained (Fig. 1).

Fig. 1.—Case 1. Postmortem photograph showing results of involution. Only one well-defined tumor mass remains (left axilla).

Blood: A blood examination showed a slight anemia with an absolute leucocythemia of 18,750. A differential count of 1,000 cells showed a very marked relative increase of the large mononuclear leucocytes. These cells amounted to 44.3 per cent. of the total with a proportionate decrease in all other elements.

Cultures: Cultures from the ulcerating and non-ulcerating lesions showed the ordinary pus organisms, together with *B. coli* and *B. subtilis.* Smears from a pustule were stained in Wright's stain and examined for *Treponema.* One organism of the *refringens* type was found, but a careful search failed to reveal more of either type.

One of the growing tumors was excised under aseptic conditions, the skin surface removed and the mass teased in normal salt solution. The suspension thus obtained was injected into a full-grown ring-tail monkey, both subcutaneously and intraperitoneally and into the femoral vein. In addition, a small bit of the tumor was tucked under the skin of the abdomen. The animal exhibited no symptoms. The mass under the skin gradually disappeared. A blood count one week after inoculation was entirely negative, as was another done at the time of the autopsy. Gross and microscopic examination of the animal's tissues were negative.

Histology.—Histologic examination of the tumors from the patient was made after Zenker's fluid and formalin fixation in various staining methods. No autopsy could be procured on this case.

The tumors showed that the corium had been entirely replaced by the invading cells, except for small strands of connective tissue, which were widely separated and thinned out by the infiltration. The muscle layer below showed a lesser grade of the same process. The tumor mass was most dense in the lower layers but the infiltration extended up to the thinned-out epidermis without the interposition of any connective tissue layer between the tumor cells and the basement cells of the Malpighian layer. The papillæ of the corium were very much widened into broad club-shaped or oblong masses. The interpapillary projections of the epidermis were greatly elongated and thinned out in most places. In some areas they had disappeared entirely, leaving only an attenuated epidermis. In some places the papillæ were solidly packed masses of the tumor cells, in some the cells were more or less widely separated and between them lay a very finely granular pale staining material and many leucocytes. The infiltration seemed no more dense around the vessels than in other areas (Fig. 2).

Fig. 2.—Section of a tumor from Case 1 showing thin epidermis and more or less closely packed infiltrating cells. Eosin and methylene blue stain. × 30.

The coiled portions of the sweat glands were found lying at a considerable depth in the tumor mass. The tumor cells were all of the small round-cell type, but varied somewhat in size. They lay embedded in a very delicate stroma which could be very readily seen after staining with Mallory's phosphotungstic acid hematoxylin without ferric chlorid. The elastic fibrils demonstrated by Weigert's elastic tissue stain and by the anilin blue connective tissue stain were almost entirely lacking in the tumor masses, being represented only by short straight fragments. At the edges of the tumor a gradual disappearance of elastic fibrils could be demonstrated, passing from the wavy fibrils in the adjacent normal skin to straightened thin lines, less in number and more scattered in distribution as the tumor proper was approached (Fig. 3).

At the base of the interpapillary projections of the epidermis, some of which were more or less broadened out by the Here the tumor cells could be seen pushing in between the process, active infiltration with tumor cells was taking place. columnar epithelium of the lower row of cells of the Malpighian layer and also between the prickle cells.

In the areas of most active infiltration another mode of invasion was noteworthy. This consisted of a penetration of the neoplastic cell into the body of the epithelial cell. The actual mode of entrance was not observed, but lying within a vacuole completely surrounded by protoplasm bearing the typical radiating lines or prickles and crowding the prickle cell nucleus into a crescentic mass at one end, were one or more cells of the type comprising the tumor. These cells had been observed, with their nuclei, in the resting stage and in mitosis, and one, two, three and four cells had been seen in such a space. In one prickle cell three invaders were seen, two of which showed definite karyokinetic figures. All stages of dissolution of the containing epithelial cell were noticed from instances in which the vacuole was small and the prickle cell nucleus only slightly pushed to one side to those in which the nucleus was represented by only a faint crescentic line and the protoplasm was faint-staining and somewhat broken up. These invasions, while readily seen by any of the ordinary staining methods, were best brought out by rather light staining in phosphotungstic acid hematoxylin, followed by thorough washing with ferric chlorid. This method differentiates strikingly the nucleus of the invading cell from that of the host (Figs. 4 and 5). The neoplastic cells, though varying considerably in size, were apparently all of one type. Their protoplasm was small in amount and faintly basophilic in staining reaction. The nuclei ones broke down and ulcerated. Prolonged treatment with iron and arsenic apparently caused a considerable improvement but the condition again became exaggerated and at the time of admission nearly the whole body was covered with small tumor masses and indurated nodules.

Examination.—Physical examination revealed no abnormalities, except in the skin. The patient failed rapidly and died Jan. 29, 1906. During the last few weeks the tumor masses almost entirely disappeared, leaving only a general nodular induration.

Blood: Blood examination showed a slight anemia and a slight leucocythemia. Differential count showed 9.2 per cent. of eosinophiles. A few normoblasts were seen. Otherwise negative. Blood culture, about two weeks antemortem, was entirely negative.

Autopsy.—At autopsy, except for the skin, nothing noteworthy was found on gross examination. Microscopic examination of the autopsy material was practically negative. Bone marrow showed many eosinophiles, both mononucleated and multinucleated. Neutrophilic myelocytes were numerous. Erythroblasts were much increased in number and occurred in clumps of dozens. Giant cells were numerous and in all stages of development. There were many small clumps of undifferentiated cells (probably premyelocytes and not tumor cells).

Fig. 3.—Elastic fibers, wavy and close packed at the right near the normal skin, disappearing toward left as tumor is reached. Weigert's stain. × 30.

Fig. 4.—Tumor cell lying within epithelial cell of prickle layer. Phosphotungstic acid hematoxylin stain. × 1000.

of the smaller cells were fairly deeply staining, while those of the larger were pale and round, often showing a definite nucleolus and various arrangements of chromatin masses.

Many mitoses in all stages were observable. The cells were very evidently of the lymphocyte series.

No plasma cells were found in the tumor, though they were not infrequent near its edges in the surrounding tissue, either uninvolved or just undergoing involvement. No giant cells were seen. There were occasional phagocytic endothelial cells with vacuoles and with vacuoles containing tumor cells.

CASE 2.—*History.*—Man, aged 59, was referred by Dr. H. F. Copeland, Whitman, Mass., and admitted to Boston City Hospital, Jan. 16, 1906, in service of Dr. F. H. Williams.

Family history and past history negative. Always in excellent health.

Present Illness.—Two years previous to his admission, patient was troubled with a rash which was diagnosed as a nettle rash. This only partly disappeared. At the end of a year the entire skin of the body presented a severe eczematous condition. After a few months nodules developed, varying from very minute size to that of an orange. Many of the larger

Skin: Strips were taken from abdomen and left and right arms and legs. Left leg had not been exposed to the *x*-rays.

Histology: Infiltration was chiefly localized along the course of the larger vessels, principally the veins and along the hair follicles and deep glands, and consisted largely of cells of irregular shape with faintly staining neutrophilic protoplasm and large oval pale vesicular nuclei, apparently endothelial cells. Among these cells were numerous eosinophiles and small round cells of the lymphocyte series, many of which were in mitosis. These cells had a small amount of slightly basophilic protoplasm and a compact deeply staining nucleus. Throughout the infiltrated areas were many endothelial cells showing a tendency to multinucleation and some well-defined giant cells. These bore no demonstrable relation to the elastic fibrils. The corium in all areas showed considerable thickening. Epidermis was normal, even where it came in contact with the infiltrated areas beneath.

Scharlach R. stain showed, in addition to the fat cells in the lower layers, a moderate amount of fat in very small droplets, confined almost entirely to the connective tissue cells in the corium in and near the areas of infiltration. Weigert's stain showed no fibrils in the the infiltrate, in other areas they

appeared normal in amount and arrangement. Other special staining methods brought out nothing of importance. No difference could be made out in the character nor extent of the process between the parts exposed to the *x*-rays and those unexposed.

The material examined from Case 1 was from the growing tumors of the third or mycotic stage and the type of infiltrating cell is entirely compatible with those composing a small round cell sarcoma. They lie, however, in close apposition to the lower layers of the epithelium with no intervening connective tissue, while a comparative study of a number of undoubted sarcomata of various types, including lymphomata, show these growths to have their origin deeper in the corium and to push up as they grow a thin band of connective tissue which remains as an enveloping sheath between the tumor cells and the epithelium until actual necrosis and ulceration take place. In one type, however, namely, the melanotic sarcoma, the neoplastic cells lie in the same relation to the epithelium as that noted in mycosis but here the cell is entirely different.

Fig. 5.—Two tumor cells within an epithelial cell. Phosphotungstic acid hematoxylin stain. × 1000.

This localization of the infiltrate immediately beneath the Malpighian layer of epithelium may be likened to a similar deposit in the cutaneous lesions of the infectious granuloma. In both syphilis and tuberculosis and to some extent in glanders and leprosy (infectious granulomata) the round cell collections show an identical distribution, but in all of these the progress of the condition is marked by degenerations of adjacent normal tissue elements and often of considerable necrosis, both of which are notably absent in the growths of mycosis except in instances in which the involved structures have become attenuated to such a degree that necrosis can readily be accounted for by pressure or the cutting off of nutrition.

In this case there was an absolute leucocythemia of 18,750, of which 44.3 per cent., or nearly all of the actual increase over the normal count, was made up of large mononuclear cells. These cells were of about the size and general appearance of the tumor cells. No mitoses were demonstrable in them, however, while in the fixed tumor cells karyokinetic figures were numerous.

In Case 2, as will be noted from the foregoing description, the skin examined was from the irregular indurations remaining after the entire disappearance of the tumor masses. Here was found an infiltration following the vessels and glands and consisting of accumulations of various types of cells which, as a whole, gave a picture of a simple chronic inflammatory change (Fig. 6). The autopsy findings were entirely negative.

From the findings of these two cases no definite conclusions as to etiology or nature of the disease can be drawn. For the reasons mentioned, together with the negative results of cultures and animal inoculations, however, it seems justifiable to conclude that the disease can not be classed with the infectious granulomata.

The conception which classes the leukemias with the malignant lymphomata, i. e., a tumor of the lymphocyte-forming organs whose cells are free in the blood instead of remaining fixed at their point of origin, seems to be gaining acceptance. This theory, combined with the well-recognized progression and regression of this disease, suggests the possibility of a leukemic process with

Fig. 6.—Section of indurated nodule from skin of Case 2 showing slight infiltration along line of glands. Eosin and methylene blue stain. × 30.

its metastasis solely in the skin having as an analogy the selective metastasis often seen in carcinoma of the breast, in which the neoplastic tissue will be found almost replacing the liver, with no involvement of the other viscera and with no definite anatomic channel of transmission other than the blood stream.

A long series of cases, including exhaustive studies of the blood and blood-forming organs at various stages of the process, would be necessary to give weight to this suggestion, but the finding of some cases associated with leukemia and of metastases in others might be offered as partial evidence. The intimate correlation of the various types of leukemias through the border line or combined cases speaks for an etiologic factor which is not dissimilar and which might, though like midway cases, bear on the problem of mycosis fungoides.

ENDOTHELIOMA OF THE SKIN.*

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New growths composed of endothelial cells, and arising from the intima of the blood vessels and lymphatics, are well recognized pathologic entities. They are not infrequent in the internal organs, especially in the parotid and salivary glands, and in connection with the serous membranes. It is only of recent years, however, that they have been differentiated from other and

Fig. 1.—Endothelioma cutis.

commoner neoplasms; for in appearance the endothelial cells that make up their mass vary from a large nucleated somewhat rectangular cell very like the epithelial elements of carcinoma, to a smaller, rounded cell resembling those characteristic of sarcoma. Borst[1] voices the opinion, now general with pathologists, that to the class of endotheliomata undoubtedly belong many of the cases of atypical or mixed new growths which have been recorded under such names as endothelial carcinoma, endothelial sarcoma, angiosarcoma, cylindroma, fibroplastic tumor, lymphangioma, lymphatic cancroid, etc. Their differentiation from carcinomatous and sarcomatous new growths is important both from a prog-

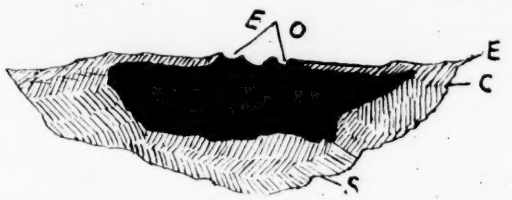

Fig. 2.—Endothelioma cutis. Sketch of the macroscopic appearance of the bisected tumor, double life size. EO, epidermic orifices; E, epidermis; C, corium; S, subcutis.

nostic and a therapeutic point of view. For the endotheliomata are essentially benign tumors, growing very slowly, having no tendency to metastasis or lymphatic gland involvement, and are not prone to relapse after removal.

Recorded cases of endothelioma of the skin are as yet comparatively few. They have varied so much in appearance that it must be confessed at the outset we do not appear as yet to have any reliable clinical criteria for their recognition. Thus in Spieger's[2] three classical cases, which have been the basis of most of the subsequent studies of the disease, the scalps were covered with a considerable number of closely aggregated pea to orange sized hard tumors. In Braun's[3] case there was a single, quarter dollar sized ulceration with hard, carcinoma like edges. Allen's[4] case had a single cartilaginous tumor of the scalp; while in that of Hartzell[5] there was a softer mass of a yellowish-red color. Von Waldheim[6] had a case in which there were multiple, flat,

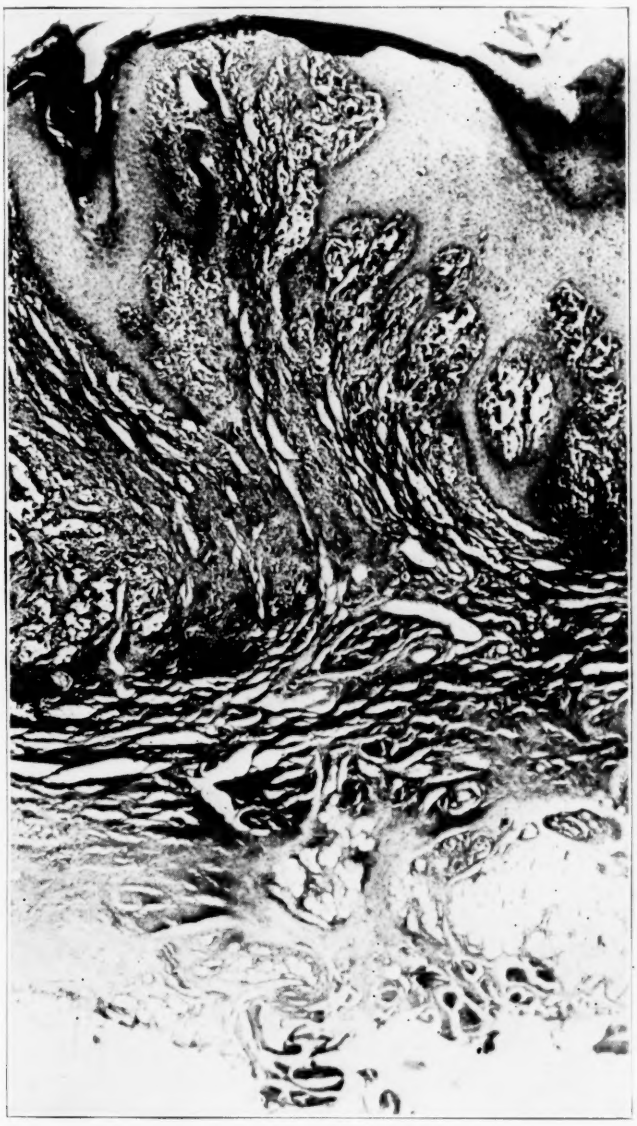

Fig. 3.—Endothelioma cutis. (×33). Upward proliferation of dilated lymphatics from the interlobular plexus. In many of the spaces the cells have fallen out.

smooth tumors with an unaltered integument. In a number of other cases fatty, calcareous, and other regenerative changes seem to have occurred. Thus Kromayer[7] records one consisting of numerous minute yel-

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Die Lehre von dem Geschwülsten," vol. I, p. 295.

2. Monats. f. prak. Derm., 1900, xxx, p. 76.

3. Langenbeck's Arch., xliii, 1; also Monats. f. prakt. Derm., 1893, xvii, p. 585.

4. Monats. f. prakt. Derm., 1900, xxxi, p. 47.

5. Brit. Jour. Derm., October, 1904.

6. Arch. f. Derm. u. Syphil., 1902, lx, p. 215.

7. Virchow's Arch., 1895, cxxxix.

low tumors, and Perthes[8] one that had undergone calcification.

It is very evident, therefore, that, in the present state of our knowledge of the subject, the diagnosis of cutaneous endothelioma can only be made positive with the aid of the microscope. A study of the recorded cases leads me to the following insufficient conclusions: Most cases of cutaneous endothelioma have occurred on the scalp; they have appeared most often as single or multiple, flat or pedunculated tumors; they are not prone to break down, but are very liable to undergo degeneration, more especially of the fatty variety, and so to show a more or less marked yellow color; they grow very slowly and show no evidences of malignancy.

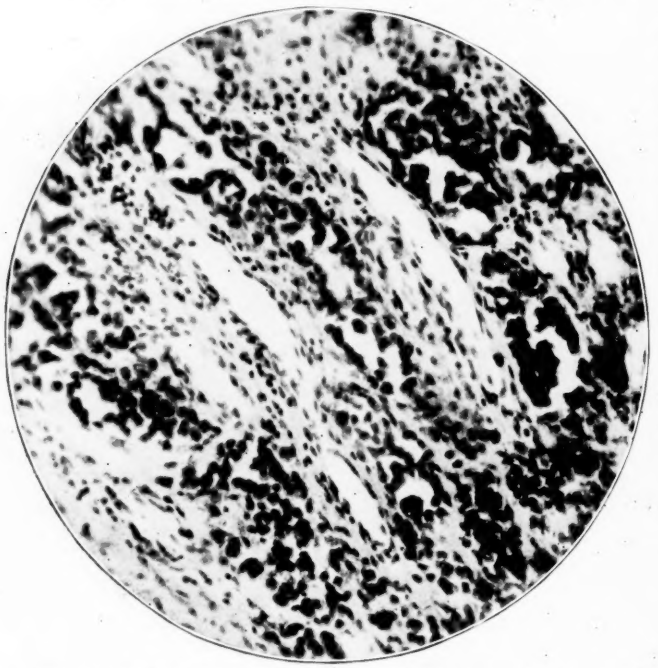

Fig. 4.—Endothelioma cutis (× 200). Dilated lymphatics stuffed with endothelial cells. In some these latter have fallen out during preparation.

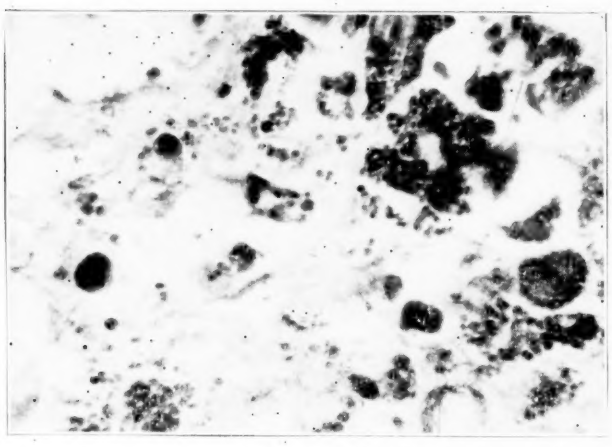

Fig. 5.—Endothelioma cutis (× 800). Pigment accumulation in the endothelial cells. From the margin of the tumor.

CASE REPORT.

I record the following case as a contribution to the study of the disease because it was diagnosed as sarcoma before extirpation, and because it shows the as yet unrecorded pigmentary degeneration in a case of the kind.

History.—Patient, an otherwise healthy married woman, aged 27, was sent to me by Dr. Schulhofer, Oct. 16, 1905. Two years before, she first noticed a black spot as large as a French pea on the outer border of her right foot. It was slightly elevated and did not discharge or trouble her in any way. She paid no attention to it. During last summer she noticed that there would be blood on her stocking after walking, and that the tumor had grown considerably larger. Since then she has had some trouble from it. It would heal for a few days and then break open again and discharge a seropurulent fluid mixed with blood. It was undoubtedly increasing more rapidly in size.

Examination.—Just posterior to the middle of the outer border of the right foot there was an irregularly circular coal black lesion. The blackness was absolute and had no tinge of brown or blue, as if a piece of ebony had been imbedded in the skin (Fig. 1); and the infiltration was limited sharply as if with a fine pen, the surrounding skin showing no macroscopic evidences of any inflammatory reaction. The mass was ¾ in. in its longest diameter by ½ in. in its shorter diameter. It was irregularly circular, with projections and

Fig. 6.—Endothelioma cutis. An unstained section from the center of the tumor, showing the endothelial cells completely filled with pigment.

was very slightly elevated. Its surface was smooth and covered with an apparently unchanged epidermis, save in its center, where there was a small pea-sized excoriation with two or three minute orifices in it from which a very little bloody serum exuded. There was neither pain nor discomfort from the growth, save that occasioned by the stocking sticking to the dried exudation. With the finest wire probe I could not penetrate over a line into any of the openings. In consistency the mass was a little harder than the skin and subcutis in the location affected (Fig. 1).

Diagnosis.—My first diagnosis of melanotic sarcoma was made with considerable hesitation; for the growth of the tumor had been very slow indeed, its blackness was intense beyond anything that I had seen in a condition of the kind, its absolutely linear demarcation from the surrounding tissues was unusual, and there was no history at all of the exist-

8. Monats. f. prakt. Derm., 1895, xxi, p. 658.

ence of a mole or wart at the spot previous to its appearance. At the Manhattan Dermatological Society, where the patient was shown in November, the diagnosis was generally concurred in. No treatment was advised and the patient was kept under observation.

Operation.—By the end of November it was very evident to me that the tumor was increasing in size, and there had been a smart hemorrhage from it after a bruise; so I excised it December 3 under local beta-eucain anesthesia. It was necessary to cut deeply into the subcutaneous tissue of the sole to get it all out, but even during the excision the coal-black tumor mass was absolutely distinct and circumscribed in the tissues. On bisecting the excised mass it was apparent that the tumor originated in the cutis and extended downward into the subcutis; the epidermis could be seen macroscopically as a fine uncolored line extending over the surface of the infiltration, except at the two places where the surface openings were present (Fig. 2). From its location it was, of course, impossible to close the wound; it was dressed and allowed to heal by granulation. In three weeks it had cicatrized completely. In March, 1906, the scar was entirely normal; at present, May, 1906, Dr. Schulhofer informs me that lately there has been a reappearance of the tumor *in situ*. As the tumor was growing rapidly a wide excision was done again this fall.

Microscopic Examination.—Portions of the excised tissue were hardened in alcohol and in Fleming, cut serially in paraffin and stained with Van Giesen, polychrome methyl blue and alum carmin for general view, resorcin-fuchsin for the elastin, depigmented and stained variously, etc. The new growth was found to be in the corium, extending into the subcutis and involving the epidermis only secondarily. It was composed entirely of proliferated, dilated lymphatic vessels stuffed with cells.

The new lymphatic growth can be distinctly seen stretching upward from the transverse subcutaneous lymphatic plexus in clubbed and branching masses, many of which penetrated the epidermis up to the corneous layer and perforates even that at the surface openings in the tumor mentioned above. There was a marked acanthosis of the prickle cell layer at the margins of the tumor (Fig. 3).

The stratum corneum of the epidermis was very thin where it was present, consisting of only four or five layers of cells, though the tissue comes from the sole of the foot. In some places only the stratum disjunctum was left; and here there was persistence of the nuclei and pigmentation of the corneous cells. Over the most prominent portions of the tumor and especially in the neighborhood of the external orifices, the epidermis was entirely wanting. The granular and prickle cell layers, on the other hand, were greatly hypertrophied in places, consisting of 15 to 20 rows of cells and projecting down in clubbed masses between the lymphatic overgrowth. The cells of the granular layer show marked karyokinesis, doubled nuclei, etc., and many of them are vacuolated. Keratohyalin was abundant; but the stratum lucidum is not demonstrable.

The papillary layer was entirely absent where the tumor is well developed. At the margins of the growth where the acanthosis was marked, there was a small amount of perivascular small-celled inflammatory infiltration. This was also present in small amount at the base of the tumor. The collagenous tissue between the lymphatic nas masses was normal, the elastin, however, was diminished. The new growth itself was composed entirely of hypertrophic and dilated lymphatic vessels stuffed with cells (Fig. 4). In many places these cells had fallen out; in others the masses were intact. The cells were polygonal or rounded large nucleated structures. In some places their protoplasm and nuclei were distinctly visible, though they invariably contained pigment granules. But most of them were filled with pigment masses, aggregated into rounded clumps (Fig. 5). Very many of them were apparently composed of masses of round pigment clumps alone, both cell protoplasm and nucleus being entirely obscured. Careful examination, however, revealed the presence even in these latter of the well preserved cell membrane, showing that the process was an infiltration and not a true cell degeneration (Fig. 6). Sections bleached with chlorin, potassium premanganate, and oxalic acid revealed the intact though shriveled endothelial cells. The ammonium sulphid method showed the pigment to be true melanin and not of hematogenous origin.

The new growth with which we are dealing, therefore, belongs to the class formerly called lymphangioma; and since it was composed of an overproliferation of the endothelial cells of the lymphatics, we now classify it as a lymphatic endothelioma, or lymphangioendothelioma. It was peculiar in the excessive amount of melanotic pigment in the endothelial cells, causing its clinical resemblance to melanotic sarcoma. The essential difference in the prognosis of the two conditions renders their clinical differentiation important.

DISCUSSION.

DR. L. DUNCAN BULKLEY, New York City, said that these cases of endothelioma of the skin are very rare. An interesting example of the affection recently came under his observation. In this case the lesion, as in Dr. Gottheil's case, was on the foot. The patient was a man of 50 years or over, who was being treated in the surgical out-door department of the New York Skin and Cancer Hospital. There was no pigmentation, and when Dr. Bulkley first saw it, he examined it in a casual way, and was inclined to look on it as an epithelioma. It was excised, and a pathologic examination of it made at the Cornell Laboratory proved it to be an endothelioma. It recurred a number of times after excision, but finally disappeared entirely under the use of the *x*-rays.

DR. M. L. HEIDINGSFELD, Cincinnati, said that from his study of the disease he can not help coming to the conviction that the division of these various forms of malignant epitheliomata and sarcomata of the skin is a little bit too arbitrary. Various layers of the skin are at times involved by these growths; sometimes the hair follicles, sometimes the sweat glands, and the preponderance of the involvement of one of these elements over another seems to be enough ground to constitute a type. He said that cases have come under his observation which were pathologically very similar to the one reported by Dr. Gottheil, and chemically were merely ordinary types of epithelioma, the malignant changes being confined chiefly to the sweat glands. In a case of epithelioma of the forehead, which was typical in its clinical appearance, a section of the lesion was removed and had the microscopic appearance of an epithelioma; another section taken near by possessed all the histologic characteristics of a sarcoma. In malignancy there is a hypertrophy of all the involved tissues, irrespective of their nature and character, called forth by the still undefined and unknown stimulus, and the question naturally arises as to whether or not it is always justifiable to make an arbitrary division of these various types.

DR. EDMUND L. COCKS, New York City, recalled a case which was presented at two of the dermatologic societies in New York as an example of molluscum fibrosum. One of the lesions was excised and examined by Dr. Gottheil, and a microphotograph of the lesion which was subsequently presented showed the endothelial cells running from within outward.

DR. M. L. HEIDINGSFELD, Cincinnati, said that his remarks were not meant as a reflection on the excellent character and high class of the work done by Dr. Gottheil, but were simply intended to express his belief that the more he studies the pathology of malignant conditions the more of an agnostic he becomes in that particular direction.

DR. W. S. GOTTHEIL, New York City, said that he does not agree with Dr. Heidingsfeld in regard to the microscopic findings in these cases. The difficulty is in the fact that if a man studies one portion of a growth with the high-power objective he comes to one conclusion, while a study of another portion leads him to a different conclusion. Dr. Gottheil prefers the half-inch objective to the immersion lens; a general view of the chief pathologic changes being more important for diagnosis than a minute study of one corner of it. If the endothelial proliferation involves the lymphatic spaces, he thinks the diagnosis of endothelioma is justified.

RESULTS FROM THE SURGICAL TREATMENT OF BRACHIAL BIRTH PALSY.*

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NEW YORK CITY.

WITH A NOTE ON THE PATHOLOGY BY DR. T. P. PROUT.

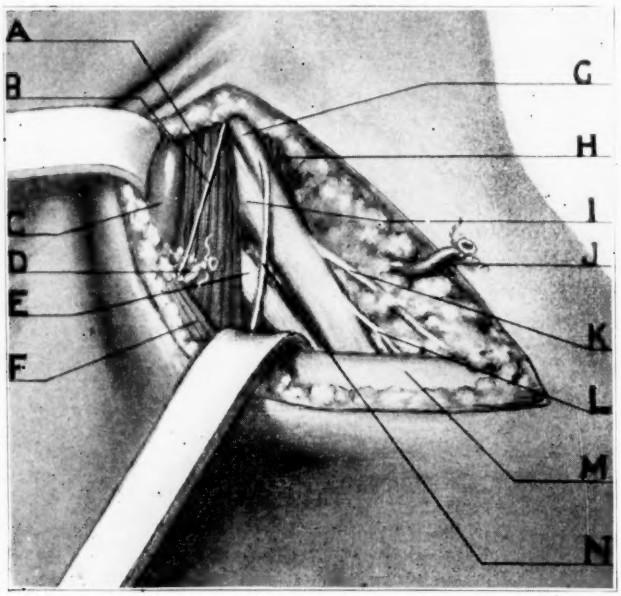

Fig. 10.—Operation for relief of brachial paralysis. A, scalenus anticus muscle. B, phrenic nerve. C, internal jugular vein. D, transversalis colli artery. E, seventh root. F, omohyoid muscle. G, fifth root. H, scalenus medius muscle. I, sixth root. J, transversalis colli artery. K, suprascapular nerve. L, external anterior thoracic nerve. M, clavicle. N, nerve to subclavius muscle.

ETIOLOGY.

The surgical treatment of brachial birth palsy rests on the pathologic lesion, and this, in turn, for its type and distribution, depends on the etiologic factor at work.

In a publication on this subject[1] it was shown as a result of twenty dissections and many experiments on infantile cadavers, that tension (overstretching) of the nerve roots of the brachial plexus was the essential causative factor of this lesion. Observations of the lesions in the series of nine operative cases led to the same conclusion. The roots give way from above downward.

This overstretching is caused only by pulling the head and shoulder away from each other, i. e., pulling on the shoulders to deliver the after-coming head in breech cases or pulling on the head when the shoulders are obstructed in vertex cases.

After this study had been sent to the publisher, an actual case occurred under my fingers which corresponded exactly with the experimental work. Labor had been induced at a little over seven months for a badly deformed pelvis in the mother. Labor coming on while the attending obstetrician was unavoidably out of town, the delivery came to me as an emergency case.

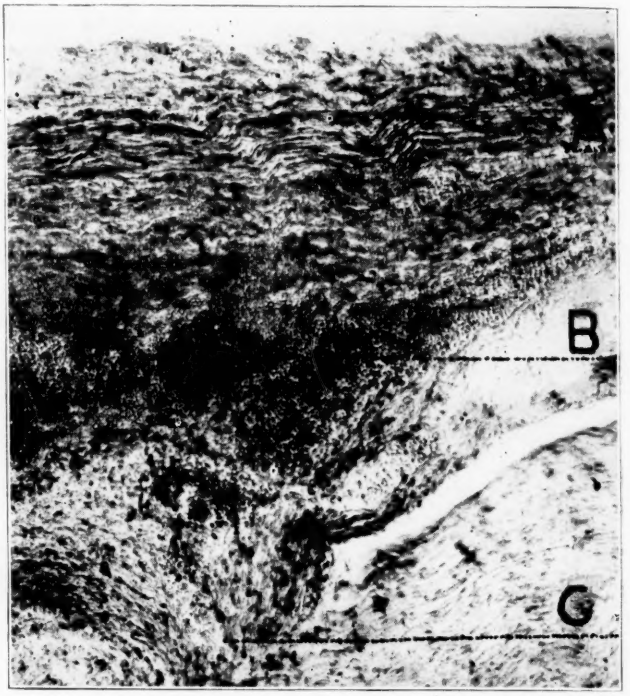

Fig. 18.—A, perineurial sheath at point of rupture and from which hemorrhage originated. B, hemorrhage, beneath the perineurial sheath which crowds aside the ruptured nerve fibers. C, Ruptured nerve fibers, turned inward.

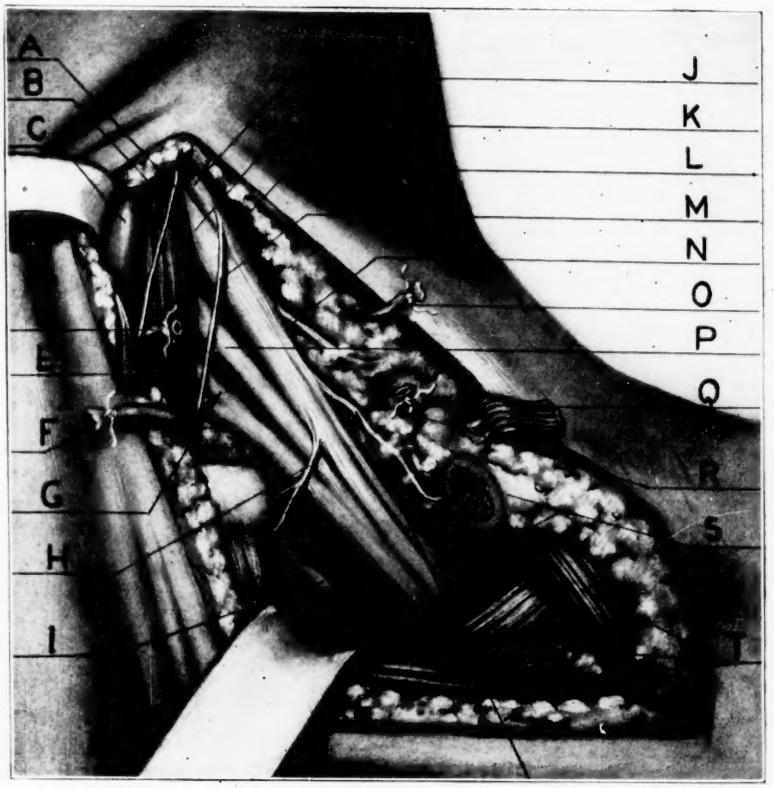

Fig. 11.—Operation for relief of brachial paralysis. A, phrenic nerve. B, scalenus anticus muscle. C, internal jugular vein. D, transversalis colli artery. E, omohyoid muscle. F, suprascapular artery. G, eighth cervical and first dorsal roots. H, muscular branch. I, subclavian vein. J, fifth root. K, sixth root. L, scalenus medius muscle. M, nerve to subclavian muscle. N, suprascapular nerve. O, transversalis colli artery; omohyoid muscle. R, suprascapular artery. S, clavicle and subclavius muscle. T, pectoralis major, pectoralis minor and deltoid muscles. U, anterior thoracic nerve.

*Read in the section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906. As read at the Boston session, this paper also took up the subject of facial palsy, practically embodying the article by Dr. Taylor published in THE JOURNAL A. M. A., March 24, 1906, but including two additional cases. Dr. L. P. Clark, New York, was unavoidably absent from the section meeting and did not present the portion of the subject allotted to him.

1. Clark, Taylor, Prout: Amer. Jour. Med. Sci., October, 1905.

Podalic version was necessary. The delivery proceeded satisfactorily until the after-coming head wedged at the brim of the pelvis. The danger of producing a lesion of the nerve roots was mentioned. The traction was put as much as possible on the lower extremities, and delivery was proceeded with as slowly as seemed consistent with getting a living child.

In spite of every precaution, the upper roots of the right plexus were felt to give way under the fingers (the right shoulder being posterior and the right plexus, therefore, being put on the stretch). A few minutes later the head came through and a living child was delivered.

The left arm was moved freely, but the right lay perfectly still, was evidently paralyzed, and assumed the position of inward rotation, characteristic of this palsy.

Two hours after birth the child abruptly developed convulsions and died. The cadaver was injected with and immersed in 10 per cent. formalin. After four days the tissues were excised from the trianguiar area overlying the right brachial plexus. The fifth root and its junction with the sixth presented the appearance of overstretching and thinning which was observed in the experimental work above mentioned. The plexus was excised *in toto* and preserved for microscopic study. The report on this by Dr. T. P. Prout forms an addendum to this article. On opening the skull the cause of the convulsions and death was found in extensive hemorrhage over both hemispheres.

As a result of this overstretching in these cases there is a rupture of the nerve sheaths, their vessels and the fibers themselves. The torn sheaths and blood clots cicatrize, compress the nerve fibers and prevent the transmission of impulses.

The cicatricial tissue is not necessarily all in one mass, but may consist of several foci scattered through the area of damaged nerve roots. This fact has a very important relation to the operative technic inasmuch as all the cicatrices must be removed to obtain the best results.

Another factor greatly influencing the results in these cases consists in the contractures of the paralyzed muscles and the ligaments of the joints which occur after from six to twelve months unless combated by systematic treatment, and which cause the characteristic deformity of this lesion (Figs. 1 to 8).

The bones of the extremity do not reach their proper development. In the older patients (3 to 12 years) full extension at the elbow is prevented not only by muscular and ligamentous contracture, but also by bony contact between the olecranon process and the lower posterior surface of the humerus which has not a properly developed olecranon fossa.

TECHNIC.

The patient is anesthetized and brought to the table with the field prepared for operation. A firm cushion is placed beneath the shoulders, the neck is moderately extended and the face turned to the sound side. The incision passes from the posterior border of the sternomastoid muscle, at the junction of its middle and lower thirds, downward and outward to the clavicle at the junction of its middle and outer thirds. After the skin, platysma and deep fascia are divided, the omohyoid muscle is exposed near the clavicle, and lying beneath it are the suprascapular vessels. These structures may be retracted downward, or, if the case requires the extra room, the omohyoid may be divided, and then the vessels cut between double ligatures. The transversalis colli vessels are seen a little below the middle of the wound and are divided between double ligatures.

The dissection is rapidly carried through the fat layer to the deep cervical fascia covering the brachial plexus. In all the cases this fascia was thickened and adherent to the damaged nerve roots. This fascia is divided in the line of the original incision and is dissected away for the free exposure of the nerves (Fig. 10). The damaged nerves are usually noticeably thickened and of greater density than normal nerves. The extent and distribution of the paralysis, determined before operation, gives the clue as to which nerves are at fault. Usually the junction of the fifth and sixth roots is the site of maximum damage. The thickened indurated areas are determined by palpation and are excised by means of a sharp scalpel. Scissors should never be used for this work.

The nerve ends are brought into apposition by lateral sutures of fine silk involving the nerve sheaths only, while the neck and shoulder are approximated to prevent tension on the sutures. Cargile membrane is wrapped about the anastomosis to prevent connective tissue ingrowth. The omohyoid muscle, if divided, is sutured. The wound is closed with silk. A firm sterile dressing is applied, and a bandage is applied to approximate head and shoulder so as to prevent tension on the nerve sutures. This position must be maintained for at least three weeks. The most feasible method of accomplishing this result was found to be a plaster-of-Paris dressing placed on the child and allowed to harden in the proper position before operation. It was then trimmed and removed. When the nerve suturing was finished the splint was slipped on, the wound was then closed, the dressings applied, and the child put to bed without danger of pulling the nerve ends apart, even when the patient was struggling and vomiting in the recovery from anesthesia.

It will be noticed (Fig. 10) that (a) the tissues to be excised lie in close proximity to the phrenic nerve and internal jugular vein, and to the junction of the cervical sympathetic communications with the spinal nerve roots. (b) The suprascapular nerve comes off from the junction of the fifth and sixth cervical nerve roots, which, as already stated, is usually the site of maximum damage. This nerve is very small in children, but it should be sutured with the greatest care, since it innervates the external rotators of the humerus, the paralysis of which permits the posterior dislocation of the shoulder often seen in the older cases.

In cases in which the lesion is more extensive, especially when it lies beneath the clavicle, a wider exposure is necessary (Fig. 11). It is obtained by continuing the skin incision downward between the pectoralis major and deltoid muscles, which are then separated, dividing the clavicle in the same line, as well as the subclavius and omohyoid muscles and suprascapular vessels.

When the outer fragment of the clavicle and the shoulder are pulled outward the entire plexus is exposed down to the upper margin of the pectoralis minor muscle, which may also be divided if necessary. When the nerve suture is completed the divided muscles are repaired, the clavicle is sutured with chromic gut, and the skin closed with silk. In certain cases of extensive damage, in which so much nerve must be excised that the ends can not be brought together, a nerve-bridge of chromic catgut loops passed through the nerve ends and

surrounded by Cargile membrane may be used (see Case 9).

In other cases in which the cicatricial tissue reaches practically to the intervertebral foramen and its complete excision would not leave sufficient nerve stump to pass sutures through, the root may be divided transversely through cicatricial tissue a short distance outside the foramen and then the stump split longitudinally upward until good nerve tissue is exposed. The distal stump is then sutured up into this cleft, and at least some return of power may be expected.

Fig. 1.—Before operation. Ordinary attitude of right arm; inward rotation of arm; pronation of forearm; flexion at elbow; marked flexion at wrist.

Fig. 2.—Before operation. Highest elevation of hand and forearm possible.

CASE HISTORIES.

Nine patients have been operated on. Of these, three have been selected as showing the most interesting conditions for presentation in the brief time allowed. They will be numbered according to their positions in the operative series.

CASE 3.—F. G. C., boy, aged 8 (1903).

History.—Birth palsy of the right arm (Fig. 1). He was the third child (the two preceding labors were normal), vertex presentation, dry labor, lasting fourteen hours, in which instruments were finally used. After prolonged traction he was born asphyxiated and with total paralysis of the right upper extremity. During the first year there was slight return of power, but improvement has ceased since that time.

Examination.—The right upper extremity and half the left side (Fig. 1). Palpation showed the fifth and sixth roots to be involved in a cicatricial mass. There was loss of reaction to faradic current and reaction of degeneration in all muscles supplied by the fifth and sixth nerves. The shoulder was a flail-joint. The elbow could not be extended nearer than 30 degrees to a straight line. The wrist was markedly flexed and the ulnar adducted. The extremity was cooler than the normal one and the hand was purple colored. The bones of the extremity were from 12 to 20 per cent. shorter than the corresponding ones of the opposite side. There was pronounced posteroinferior dislocation of the shoulder. The coracoid and acromion processes were longer, more pointed, and more bent downward and forward than normal.

Operation.—June 24, 1903. Chloroform anesthesia. The simpler of the two procedures above described was resorted to. The fascia in front of the plexus was much thickened and adherent to the nerves. When the plexus was exposed the external nerve trunk coming from the junction of the fifth and sixth roots was found torn away and displaced downward and inward 2.5 cm. and was adherent to the front of the scalenus anticus muscle by firm fibrous tissue. The nerve was dissected free and its damaged end removed. The junction of the fifth and sixth roots and the posterior trunk derived from them were cicatricial. The damaged tissue was excised, the freshened nerve ends were sutured, Cargile membrane wrapped around the junction, and the wound closed as usual. The operation lasted one hour.

Fig. 3.—Ten months after operation, showing increased power of elevation.

Subsequent History.—Reaction was good. Primary union resulted. Recovery was complicated by a severe bronchitis. Decided return of power began at the end of five months.

At the end of nine months there was marked improvement in the natural attitude of the arm (Fig. 4). At the end of ten months the hand could be raised to the hair line on the forehead (compare Figs. 2 and 3), and the head of the humerus had become firmly pulled up under the acromion process, although the posterior dislocation persisted. The shoulder could not be completely reduced because of the shortening of the pectoralis major muscle and the anterior ligamentous structures. Radiographs showed the head of the humerus and the glenoid cavity to be very much undeveloped, so that there was little natural tendency for them to retain their proper relations to each other when the dislocation was reduced.

At the end of ten months the boy was able to button two buttons of his coat with his right hand, for the first time in his life.

Attempts at supination of the hand and arm resulted in flexion and adduction at the wrist, with almost no supination, but when any form of support was given to prevent flexion at the wrist, nearly complete supination could be easily done.

June 11, 1904: One year (less thirteen days), after operation, there was first noted positive, though slight movement in the deltoid, and also in the extensor carpi radialis muscles.

During the succeeding year the patient could be seen only at long intervals. There was no increase in the range or variety of motion, although there was improvement in the strength and definiteness of movements already acquired, as well as in the general health of the patient. Systematic passive movements given by the parents had not stretched the contractured muscles and ligaments of the joints satisfactorily, and there had been no evidence of return of power through the suprascapular nerve. Therefore it was deemed wise to give ether again and forcibly to stretch the contractured soft parts

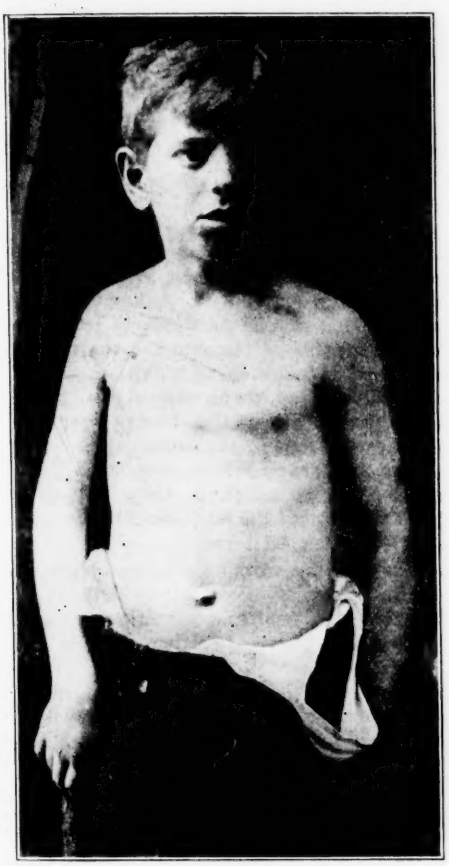

Fig. 4.—Nine months after operation, showing improved attitude of right upper extremity.

to reduce the dislocation of the shoulder, and to explore the suprascapular nerve. The operation in this case was done when the real importance of the suprascapular nerve was not appreciated, and not much attention was paid to it. When it is remembered that the muscles which rotate the humerus outward are entirely supplied by this nerve, and that the mobility of the extremity is greatly hampered through lacking this very external rotation, the necessity of most carefully suturing its distal stump to the proximal root will be readily appreciated.

Second Operation.—July 6, 1905 (two years after the first operation). Under ether the joints were forcibly mobilized, and the shoulder was reduced without great difficulty. The suprascapular nerve was then exposed by an incision involving the lower part of the previous scar and passing outward over the clavicle. The proximal end of the nerve felt hard and fibrous; it was excised and the distal portion was implanted well up into the fifth root. The wound was closed. The flexed elbow was drawn backward and toward the median line, the humerus was rotated outward, and by a plaster-of-Paris bandage the extremity and chest were fixed in this relation with the hope of maintaining the reduction of the shoulder. The wound healed by primary union. After three weeks all dressings were removed. Partial recurrence of the dislocation was almost immediate.

During the resuturing of the suprascapular nerve the site of the previous nerve suturing was explored. The nerves had united firmly; there was some enlargement and slight induration at the site of union.

Fig. 5.—Two years and seven months after first operation and six and one-half months after the second operation, showing power to put the hand to the face, involving some external rotation of the humerus and some supination of the forearm.

Fig. 6.—Same time as Fig. 5, showing slight power of abduction. Deltoid activity.

Oct. 28, 1905 (three months and twenty-two days after reimplantation of the suprascapular). There appeared slight voluntary power in the supraspinatus muscle for the first time.

Jan. 26, 1906 (thirty-one months, and six and one-half months respectively after the two operations.) There was lessened posterior displacement of the shoulder, the external rotators were beginning to act more definitely (both due to returning power in the suprascapular nerve) and power in the deltoid was increased (Figs. 5 and 6).

Remarks.—A very interesting and important feature in this case was the improved nutrition and growth of the extremity after operation. Before operation it was cold and usually blue. About three months after operation it began to keep warmer and to assume a more natural pink color. Within a year it was normal in both respects.

Measurements were not taken till April 2, 1904 (about nine months after operation), and were repeated Sept. 23, 1905 (twenty-seven months):

	Right.		Gain.		Left.	
	Apr. 2, 1904.	Sept. 1905.	Right.	Left.	April 1904.	Sept. 1905.
	cm.	cm.	cm.	cm.	cm.	cm.
Clavicle (length)	10.5	11.5	1	1	13	14
Humerus (acromion to external epicondyle)	22	24	2	0	25	25
Radius (head to styloid tip)	16.5	18.5	2	2	18.5	20.5
Ulna (olecranon to styloid tip)	18.5	19.5	1	.5	20	20.5
Arm (circumference at middle)	15	17	2	1	18.5	19.5
Forearm (cir. 5 cm. below elbow)	16.5	17.5	1	.5	19	19.5
Hand (circumference)	16	16	0	.5	17	17.5

It will be noticed that in most measurements the right extremity has gained more in actual centimeters, and relatively still more in percentage of growth (see Figs. 1 and 4, showing changed relative proportions of the two extremities).

CASE 8.—R. H., boy, aged 10.

History.—He was the second child. The details of the labor could not be obtained. Soon after birth it was noticed that the left upper extremity was motionless. For the greater part of the first year it remained completely paralyzed. After that time motion began to return and there was improvement up to three or four years of age, since when there has been no change in kind or range of motion. The extremity has always been smaller than its fellow. He has never been able to reach his mouth with his left hand, nor to place his left hand on his head, although he could elevate the hand above the level of the head.

Examination.—The boy was well nourished and normal in all respects except for the left upper extremity, which was evidently smaller than the other, and which, at rest, assumed the abnormal position of inward rotation and pronation shown in Figure 8. Passive external rotation of the humerus was prevented by the contracture of the pectoralis major (and probably subscapularis) muscle and anterior ligaments of the joint. Voluntary abduction was free (Fig. 9). Supination of the forearm, active or passive, was practically absent (Fig. 7). Movements of the fingers, hand and wrist were free. The elbow could not be extended nearer than 45 degrees to a straight line (Fig. 8).

Operation.—March 14, 1905. Ether anesthesia. The plexus was exposed, as in the preceding case. The deep cervical fascia, lying just in front of the junction of the fifth and sixth roots, and the origin of the suprascapular nerve, was much thickened and very adherent to the nerves, apparently causing compression of them. This fascia was dissected away. Underneath it the proximal end of the suprascapular was found to be thinner than its distal portion, and lying in a tortuous manner for about a centimeter. Palpation of the roots of the plexus disclosed no cicatrices (Figs. 10 and 11). The damaged portion of the suprascapular was removed and the distal stump implanted into the upper end of the junction of the fifth and sixth roots. Cargile membrane was wrapped about the nerves and the wound closed as usual.

Postoperative History.—Primary union resulted and after three weeks the extremity was given perfect freedom. The mother was instructed as to massage, passive motion, etc. From the early part of June till Oct. 31, 1905, this patient was not seen (seven and one-half months). At this time the mother reported that the extremity was warmer, and seemed to be growing more than formerly, and that its movements were becoming more free. There seemed to be no objective evidence to corroborate these statements except that the color and warmth seemed more normal.

May 22, 1906 (fourteen months after operation). The boy appeared again for inspection and this time there was evidence of substantial improvement. Supination of the hand and forearm was present as never enjoyed before operation (compare Figs. 7 and 12). Before operation he had never been able to touch his face or head with his left hand by itself (absence of external rotation of humerus), but could now do so with comparative ease (Figs. 13 and 14). A moderate power of external rotation has appeared which means that the suprascapular nerve is functionating again. As the contractured soft parts are stretched this power of external rotation should rapidly increase. Since the middle of May he has reported three times a week for treatment with an arthromotor, a mechanical appliance for graduated mobilization of joints, and this promises to give quicker results than other forms of manipulation.[2]

Measurements of the two upper extremities were taken for comparison Oct. 31, 1905 (seven and one-half months) and May 30, 1906 (fourteen and one-half months) and were as follows:

	Right.		Growth.		Left.	
	Oct.	May.	Right.	Left.	Oct.	May.
	cm.	cm.	cm.	cm.	cm.	cm.
Clavicle (length)	12	12	0	.5	10	10.5
Acromion to ext. epicondyle of humerus	25.5	25.5	0	0.	24.5	24.5
Ext. epicondyle humerus to tip radial styloid	21.5	22.5	1	2	20	22
Olec. to tip of ulnar styloid	21.5	22	.5	1.	20.5	21.5
Circumference arm	19.5	20	.5	.5	18	18.5
Circumference forearm	19.5	21.5	2	1	18.5	19.5

Remarks.—It will be noted here as in the preceding case that the gain in actual measurement is greater in most of the items in the paralyzed extremity and that the percentage gain is still greater. This case is particularly interesting because, from the complete palsy of the arm for the first few months, and the permanent disturbances of nutrition, growth and function, we must believe that there was originally a gross lesion of the plexus roots. Still, at the time of operation no lesion could be found except that in the suprascapular nerve, and the adhesions of the deep fascia which compressed the upper roots of the plexus. The correction of these two difficulties has certainly greatly improved the boy's condition.

CASE 9.—R. F., girl, aged 1 year.

History.—She was the second child, was large, and was delivered with instruments. Soon after birth it was noticed that the left upper extremity was motionless, and there has been no improvement since. In other respects she has been very well.

Examination.—Large well-nourished child, normal except for the left upper extremity, which hung lifeless by her side (Fig. 15). There was some power in the serratus magnus, contraction of which, with some contortion of the trunk, would throw the extremity slightly forward. The soft tissues were flabby and the extremity was cold. Muscles showed reaction of degeneration. A large indurated mass could be felt on the left side of the neck at the site of the brachial plexus.

Operation.—June 8, 1905. Ether anesthesia. The plexus was exposed by the usual dissection. The deep fascia was much thickened and adherent to the whole plexus, which itself was one large mass of cicatricial tissue, with the nerve roots running into it above, and the nerve trunks coming from it beneath the clavicle. The nerve roots of the entire plexus were divided above the cicatricial tissue (nearly at the intervertebral foramina). The plexus was removed *en masse* by dividing the nerve trunks at their exit from its distal end beneath the clavicle. The severed nerve ends could not be approximated to within less than 2 cm. so loops of chromic gut (No. 1, 40 days) were passed through the roots and distal trunks, and around these loops was passed Cargile membrane to form one large canal through which the nerves might have an opportunity to grow to each other. The suprascapular nerve was carefully included. The wound was closed without drain-

2. We desire to make grateful acknowledgement to Dr. Wm. O. Rau for volunteering to mobilize the joints in these cases with his arthromotor.

age, and the shoulder and neck fastened in the closest approximation. This position was maintained six weeks, i. e., twice as long as usual. The reaction was good and primary union resulted.

Postoperative History.—After its return home this child could be seen for examination only at long and irregular intervals. At the end of three months the muscles were more flabby than ever, the shoulder was a flail joint, and there was no sign of returning power.

Dec. 21, 1905 (six months). The mother first noticed that the terminal joints of the thumb, index, middle and ring fingers were swollen, glossy, red, and ulcerated on the tips. They were not sensitive and were not infected. They remained in this condition for about six weeks, the mother reported, and then gradually sensation returned and the fingers improved, until, on May 21, 1906, they were almost normal again.

While this trophic disturbance was present in the digits, there was, on Dec. 21, 1905, distinct, but slight activity in the pectoralis major, triceps and serratus magnus muscles.

May 21, 1906 (one year less eighteen days). The movement in the above mentioned muscles was stronger. There also appeared some power in the deltoid, both for anterior elevation of the arm (Figs. 16 and 17), and very slightly for abduction. There was also slight power of flexion at the wrist. When she was lying supine she could elevate the extremity to the position seen in Figure 17, without effort. At this time there was distinct contracture of the flexor muscles of the fingers (Figs. 16 and 17). The mother had not followed instructions as to massage. The shoulder had lost its flail character (Fig. 16) and the tissues of the extremity were firmer. The mother reports that at times the movements are more extensive than those shown in the illustrations.

Remarks.—This case is interesting, because, inside of a year after operation there is good evidence of returning motor power, and this could have occurred only after the bridging over by the nerves of a space 2 cm. long, inasmuch as the plexus was excised in one mass. The general view with regard to nerve-bridging is pessimistic, but it would seem to succeed in certain favorable cases, i. e., in young, healthy children. There is every reason to expect very great improvement in this last case with the lapse of sufficient time, since the child will not have to overcome the serious contractures and deformities which appear in the older cases.

RESULTS.

In all, nine patients have been operated on.

Immediate Results.—In Case 1, a child, 2 years old, in whom the entire plexus was excised, rapidly developed a temperature of 108.8 F. and died in about 19 hours. Cultures from the wound were sterile. Death was probably not due to shock, since shock was absent in all the succeeding cases, and in Case 9 the entire plexus was also excised in a much younger child. It has been suggested that death was due to one of the lymphatic conditions.

In Case 4, a child, 8 months old, immediately after operation, suffered from a recurrent diarrhea, with temperature, which had been absent for a month before operation, and on the third day developed suppression of urine and died. Cultures from the wound were sterile.

In the other seven cases there was no shock or rise of temperature, and in all of them primary union occurred, which means that an increasing number of cases will steadily diminish what seemed to be a high primary mortality, and one not inherent in the operation itself.

In all the cases except 8 and 9 there was an increased area of paralysis, due to the necessity of dividing some normal nerve fibers in excising the cicatricial foci. In all cases the power lost through operation has been regained.

Remote Results.—Improvement in nutrition of the limb is one of the first signs of regeneration in the sutured nerves, just as it was in the cases of facial anastomosis, and is evidenced by the appearance of more natural warmth and color. This change usually begins about the end of four months. The improvement in growth of the extremity is evidenced by the measurements (Cases 3 and 8). The return of power in the muscles paralyzed by the operation is usually rapid, and may be complete at the end of from six to eight months, although in Case 6 it was rather slow (15 months). The return of power in the previously paralyzed muscles appears in from six to ten months.

In the older cases the paralyzed muscles can not be expected to cause much motion for some little time after new nerve power has reached them, for during their prolonged paralysis their unopposed antagonists become contractured and the corresponding ligaments shortened. Therefore, to cause observable motion they have a double load to carry. This fact strongly accents the necessity of systematic after treatment (massage, electricity, passive motion, etc.) to prepare good mechanical conditions for the exercise of nerve power when regeneration occurs. Better still, it shows the desirability of preventing these undesirable sequelæ of paralysis by the use of the above means from a period shortly after birth till either spontaneous cure occurs or operation is indicated.

Fig. 7.—Before operation. Extreme limit of supination (nearly absent).

The increased range and freedom of motion are readily seen in the photographs of the three illustrative cases cited in this paper. The improvement in supination is specially marked in Case 8, Figure 12.

A study of the photographs (and, better still, the cases) demonstrates that the chief handicap to free range of motion lies in the absence of external rotation of the humerus. Even strong force applied in passive motion fails to cause external rotation because of the great resistance of the contractured pectoralis major muscle.

The external rotators of the humerus are entirely supplied by the suprascapular nerve; hence, the necessity of giving it special attention at the time of operation. In Case 3, in which this nerve was not successfully sutured at the first operation, there was no return of power in its muscles after two years. It was then resutured and within six months there was evidence of activity in the

spinati muscles, and the improved mobility of the extremity is shown in Figures 5 and 6.

In Case 8 in the same way the usefulness of the arm was greatly limited by the absence of external rotation. This power is gradually coming, as is evidenced in Figures 13 and 14 by the fact that he can carry the hand to his face and top of his head, movements never possible before operation. The power of all the muscles of the extremity is also increasing.

Case 9 is very interesting in that there is evidence of nerve-bridging through a space of 2 cm. after excision of the entire plexus, with the return of some motion in

Fig. 8.—Before operation. Natural posture. Typical deformity of left upper extremity.

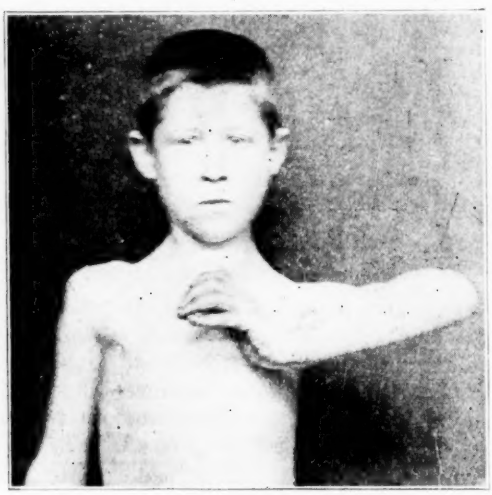

Fig. 9.—Before operation. Nearest approach of hand to face.

six months. This is the only case which showed trophic disturbances. The extreme youth and very good general health of this patient made it an ideal one for plastic healing, and the absence of the usual contractures at shoulder and elbow render the prognosis very hopeful.

The flexor contracture of the fingers has occurred largely through the mother's failure to carry out the instructions for after treatment. The fingers can be straightened with the use of very little force and it is hoped that the contracture will soon be overcome.

CONCLUSIONS.

Brachial birth palsy of the Erb type is due to overstretching of the nerve roots which results in rupture of the sheath, fibers and vessels of the nerves. From the cicatrization of the resulting hemorrhage and torn sheath there results a permanent obstruction to the transmission of nerve impulses. These cicatrices may be single or multiple. The only way to re-establish nerve conduction is to excise the cicatricial area and do an end-to-end suture of the nerves.

Fig. 12.—Fourteen months after operation with very irregular and slight after-treatment. Greatly improved supination of the hand and forearm.

Fig. 13.—Same time as Fig. 12. Ability to get the hand to the face. Supination in this position is very difficult.

If operation be delayed too long there result: Impaired development of the extremity; contractures of muscles and ligaments, and atypical shape of the joint-ends of the bones, all of which cause the characteristic deformity of this lesion, and which render postoperative return of the extremity toward normal exceedingly slow and laborious. It is probable that the older a patient is

before operation the slower and more incomplete will be the return to normal.

Early operation is, therefore, indicated. From six to twelve months would seem a suitable time, as the lesion would then have become well localized. Further experience may suggest an even earlier date.

In any case, the deformities should be prevented by the systematic use of massage etc., both before and after operation.

The damage to the nerve roots in the order of severity is from above downward. The suprascapular is always

Fig. 14.—Ability to place hand on top of head.

Fig. 15.—Before operation. Total palsy of left upper extremity.

damaged, controls the important group of external rotators of the humerus, and should, therefore, be most carefully sutured to a good proximal nerve stump at operation.

It is a common matter to have some additional palsy caused by operation, but recovery from this soon takes place.

Following operation there come improved nutrition and growth of the extremity, with increased range and power of motion. Nerve bridging may succeed in the very young (Case 9).

Correct diagnosis should be made early in order to follow proper lines of treatment.[3]

PATHOLOGY OF BRACHIAL BIRTH PALSY.

BY DR. T. P. PROUT OF NEW YORK.

In treating of the pathology of this condition as developed by the study of the excised specimens from six cases of brachial birth palsy, it was shown that the possible sequence of events in the production of the permanent palsy of the type presented in these cases was as follows: Rupture of the perineurial sheath immediately sur-

Fig. 16.—Eleven and one-half months after operation. Elevation of extremity anteriorly. Contracture of flexors of fingers due to neglect of massage, passive motion, etc., which were advised.

Fig. 17.—Same time as Fig. 16. Extremity raised perpendicular to floor with child lying on its back. This photograph was blurred, but it is the only one of this position.

rounding the nerve bundles and incidental hemorrhage from the torn vessels belonging to it. Following this, rupture of the perineurial sheath, the nerve fibers themselves become torn and the consequent hemorrhage inter-

3. Every few months cases are reported under the title of "Congenital Dislocation of the Shoulder," with one or another type of treatment, which, from the description must be cases of brachial birth palsy complicated by posterior dislocation of the shoulder as in Case 3 of this series. This dislocation is due to the paralysis of the external rotators plus the contracture of the pectoralis major and subscapularis muscles. The dislocation should not distract one's attention from the essential nerve lesion.

poses a blood clot between the torn ends of the nerve fibers.

In some instances, also, there is a buckling inward of the torn perineurial sheath which thus interposes between the torn ends of the nerve fibers a mass of living connective tissue which, together with the hemorrhage already mentioned, effectually prevents the process of regeneration in the severed nerve strands.

I am able at this time to present in addition and in corroboration of the above, a study of the fresh lesion as presented by a case delivered at seven months through a contracted pelvis, and in which the lesion was known to have been produced during traction in delivering the after-coming head. The child died a few hours after delivery, the right upper extremity having meanwhile shown the typical picture of a brachial birth palsy.

The entire brachial plexus was removed and an unusually thin strand was noticed at the point of junction of the fifth and sixth roots to form the outer cord of the plexus. The microscopic appearance of this area is shown in Figure 18. It was found that there had been an incomplete rupture of the perineurial sheath (a) with hemorrhage beneath it (b) and infiltration of the hemorrhage into the ruptured nerve strands (c).

This lesion belongs to the milder types of this affection, since the incomplete rupture of the perineurial sheath made it impossible for it to buckle inward and so interpose itself between the ruptured nerve fibers. Had the child lived, a spontaneous recovery would probably have taken place following the absorption of the blood clot (b).

NOTE:—The articles of Drs. Murphy, Taylor and Powers were discussed together. By special request of Dr. Powers, the publication of his article is postponed. The discussion will also appear later.

LANDRY'S PARALYSIS,

WITH REPORT OF FIVE CASES.*

J. N. HALL, M.D. AND S. D. HOPKINS, M.D.
DENVER.

Cases of Landry's paralysis are so unusual and in the past have been so indifferently reported that the recent occurrence of three cases in our practice, of one case kindly reported to us by Dr. H. W. Kirby, Georgetown, Colo., and of a fifth case by Dr. C. F. Wolfer, Louisville, Colo., leads us to report them, with a review of the literature for the past year.

There seems to be no general agreement as to just what cases should be included under the term acute ascending paralysis. In the literature we have found a number of cases reported under this head that were obviously myelitis, poliomyelitis, or multiple neuritis.

In our report we shall consider as typical only those cases characterized by acute onset, motor paralysis, ascending in character, without material involvement of sensation, and with loss of the deep and superficial reflexes, with or without involvement of the sphincters, and generally fatal by respiratory paralysis within one or two weeks, or rarely progressing to a slow recovery. The following five cases we regard as such typical examples:

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

CASE 1.—F. R., male, 22, farmer, single, came from Kansas to Colorado six months ago. The other six members of the family living and well.

History.—Patient has had no illness since childhood; no venereal infection. Three days ago, at 3 p. m., he had severe abdominal pain, cramplike in character, followed by lancinating pains in the back, thighs, calves and feet. These pains kept him awake all night. He was up and around the next two days, but not well, and the pains recurred on the night of the second day. There was no muscular weakness yet.

About 64 hours after the beginning he felt tingling, numbness and weakness in the legs, such that he fell to the ground, and the pains in his legs recurred. He got into bed and rested two hours, entirely conscious, but found himself completely paralyzed as to motion in lower extremities when he then tried to rise. The bowels were constipated. There was marked anorexia; no vomiting, nose-bleed nor sore throat. Retention of urine now appeared, and the bowels moved involuntarily under a cathartic.

Clinical History.—He was admitted to the Denver City and County Hospital on the fourth day of the disease, in the service of Dr. Hall. He was soon transferred to the neurologic service of Dr. Edward Delehanty, and seen in consultation by the late Dr. J. T. Eskridge. To Dr. Delehanty we are indebted for the permission to report the case.

The face was flushed, temperature 100, pulse 88, respiration 32, tongue coated; it was protruded properly. Cheeks were sunken. Pupils were moderately dilated, responding to light and accommodation, the left slightly larger. The vertical diameter of the left pupil was slightly greater than the transverse. There was no narrowing of visual fields. Chest and abdomen were not notable, except for lack of respiratory action in the chest. Epigastric movement was comparatively greater, the breathing being evidently chiefly diaphragmatic. There was complete paralysis of all muscles, including the sphincters, below the level of the navel. All deep and superficial reflexes were absent below this level. Tactile, localization, muscular, joint, pain, temperature, position in space senses normal. Consciousness was perfectly normal.

On the sixth day there was no perceptible motion to chest on inspiration. The patient was unable to cough, and secretions, which he was unable to expectorate, collected in the throat; the arms were very weak; could feel catheter in bladder, but without pain; could tell of action of enema, but had no control over sphincter. Temperature had varied between 98 and 103.1, averaging about 101 in hospital, and 99 or less during the remaining three days. The pulse ran between 80 and 100 and the respiration between 20 and 32. The urine was negative, and passed in nearly normal amount. Infusion of digitalis, and liquor ammonii acetatis were given, with dry cups to the back.

Patient was removed on the eighth day against advice, and started on the train to Kansas. He seemed moribund when he started, and we understand did not live to reach home.

CASE 2.—Dr. Hopkins saw the following case with Dr. H. M. Ogilsbee of Manitou, Colo., August 7, 1904.

History.—A healthy girl, five years of age, had had no serious illness. On August 4 she waded in cold mountain water. She retired that evening feeling perfectly well, but on awakening the following morning she was unable to move her legs. The paralysis gradually ascended the limbs, affecting the trunk and the muscles of the throat and of speech.

Examination.—Friday, August 7: Patient was unable to move legs, but could move arms slightly. Pulse was irregular and rapid; respiratory actions irregular; all deep reflexes were absent; superficial reflexes were absent, except the plantar, which were present, but very slight. All sensory phenomena were normal. Sphincters were intact. Pupils responded to artificial light. Fundi were normal. Speech was markedly impaired; unable to pronounce words distinctly. Saliva dribbled from the mouth. Intellect was bright.

Patient died the night of August 7, very suddenly, after taking a drink of water.

CASE 3.—The notes of this case are furnished by Dr. C. H. Call of Greeley, Colo., with whom Dr. Hall saw it in consultation on the third day, and many times later.

History.—W., a healthy single man, aged 26, superintendent of lumber yards, gave a good family history. Patient has not had syphilis or any serious illness; does not drink; was entirely well four days ago, but came home sick the next day, complaining of aching and malaise. Dr. Call of Greeley, Colo., found the temperature 101, pulse 100. No physical signs were found in the chest or abdomen. There was pain in the back and the testicles required 1/2 gr. of morphia for relief.

Next day the bladder was paralyzed, and the catheter became necessary. There was no cough nor vomiting. On the second day the legs became paralyzed, the patient falling helpless when attempting to rise from the bed. Dr. Call found motor paralysis of the legs and thighs. There was a slight wandering delirium at night, and for several days after.

Examination.—When I saw the case with Dr. Call, of Greeley, Colo., on the third day, we found the temperature 100.8, pulse 100, respiration 20. There was complete flaccid motor paralysis of all parts below the last dorsal vertebra, except for a perceptible movement of the toes, about one-fourth inch in magnitude, more marked on the left foot. So complete was the paralysis of the bladder that pressure with the hand was needed to empty it after the introduction of the catheter. The anus was relaxed and the bowels had failed to respond to repeated catharties, finally moving fairly after an enema. Sensation in all its forms was perfect. No superficial nor deep reflexes could be elicited below the point named. The arms were so weak that the patient could not turn himself. Slight muscular twitching had been noted by the patient in hands and forearms, but the reflexes were present and normal. There was no paralysis of face or of the extrinsic eye muscles. Pupillary reflexes were normal. Retinæ were negative. The chest and abdomen presented nothing abnormal. Spleen and glands were normal. Marked sweating existed, and persisted for more than a week. Patient had not slept since the beginning of the illness, and chloral was given by Dr. Call with good results. Sodium salicylate had been given at first, but we decided to continue the iodid of potash prescribed the preceding day by Dr. Call, and the urotropin (hexymethylenamin) given to prevent bladder infection. Inunction with mercurial ointment was instituted.

When seen again, seven days later, temperature was 99, pulse 90, respiration 22; weakness of arms was much more notable. The patient could not use the diaphragm, and hence could not speak well, nor sneeze nor cough. Respiratory movements were very feeble. A bad prognosis was given, and the treatment continued. On December 23, the patient was seen with me by Dr. S. D. Hopkins at St. Luke's Hospital in Denver, to which he had just been removed. He had improved slowly, but steadily, since my last visit, the respiration becoming easier from that very day. Dr. Call had instituted irrigation of the bladder with boric acid, had just omitted the iodid, and started the patient on strychnin in fair dosage. No serious bladder infection had occurred. Patient had regained sufficient strength in the arms to turn himself in bed. The abdominal muscles were nearly restored to their normal function, and the bladder would empty itself through the catheter, without pressure on the abdomen. The legs could be moved slightly and some of the muscles responded to the Faradic current. On May 20, 1906, he could stand on his feet, and is apparently making a slow but fairly complete recovery.

CASE 4.—We present the following abstract of a case occurring in the practice of Dr. C. F. Wolfer, Louisville, Colo., and carefully observed and reported by him.

History.—W. G., male, aged 10, had always been delicate, but had had no illness aside from measles and chicken-pox. Family history was negative. The mother states that the boy's eyes have lately been so protruberant as to be noticeable. Sept. 8, 1903, Dr. Wolfer vaccinated the boy at his office. Patient was much excited about it, and had a chill, presumably nervous in character, on the way home, and another on arriving there. From September 8 to 11, the boy complained of not feeling very well, but was not confined to bed. He vomited on September 10. The vaccination wound showed no signs of irritation. He had several crying spells, and said he could not prevent them, and that he had no control over his hands. On the evening of September 11 he lost control of the bladder, and during the night the mother reported that the feet and legs became paralyzed, so that he fell to the floor on attempting to rise from the bed.

On September 13 Dr. Wolfer found the boy's temperature 104, pulse 130, respiration 40. There was complete motor paralysis below the hips, without involvement of sensation. No urine had passed for eighteen hours, and 4 ounces were obtained by catheter. He complained of no pain, and was perfectly conscious. He feared that he was going to fall, and said that his feet felt as if tangled up in wire, or as if he was lost in the tall weeds growing on the farm. He could be reasoned out of these fears if the feet were moved, and encouragement given him. His appetite remained good throughout the illness except on the day of the vomiting.

On September 14, temperature was 104.6, pulse 150, respiration 48. The motor paralysis extended to the iliac and hypogastric regions. Very little urine was obtained by catheter. There is no note of the presence of albumin or sugar. On this day the abdomen became much distended with gas, as though from intestinal paresis. There was neither pain nor tenderness over the belly.

Patient died at 2 a. m. September 16, about four and a half days after the beginning of the illness. Temperature rose to 106. The diaphragm and respiratory muscles were apparently paralyzed at last, since the boy in attempting to speak, could only move the lips, being unable to make a sound.

Treatment was symptomatic only. No autopsy was held. We have no record of the reflexes, but the history seems sufficient for a diagnosis of acute ascending paralysis.

CASE 5.—The notes in this case were furnished us by Dr. H. W. Kirby, Georgetown, Colo., to whom we are much indebted.

History.—R., widower, aged 64, mining engineer, of good family history, was a moderate drinker and smoker. He had subacute rheumatism in December, 1905, but was not confined to bed. On Feb. 24, 1906, he had pain in the knees and chest, thought to be also rheumatic. On February 28 the pain was absent, but marked weakness existed in the left leg. Next day complete motor paralysis was noted below the lower third of each thigh. This paralysis reached the abdomen on the eleventh day, and, on the fourteenth, the muscles of respiration, death ensuing early on the sixteenth day from respiratory paralysis.

There was no pain ,but numbness and formication in the lower limbs, without any material impairment of sensation. All reflexes were lost. No atrophy of muscles was noted. Sphincters were involved on the ninth day. Consciousness was impaired. Constipation was obstinate. Iodid of potash, salicylates and strychnin were administered, but without apparent results. Urinary antiseptics were given also.

This abstract apparently justifies the diagnosis of Landry's paralysis.

SUMMARY OF THE CASES REPORTED IN THE LITERATURE DURING NINETEEN HUNDRED AND FIVE.

The cases reported during the past year and analyzed by us are briefly abstracted below:

1. FOLEY:[1] Male, 35. Ascending paralysis; sweating; lost reflexes; sphincters not involved; cardiac pain; sensation dull; no real anesthesia; recovery after two months.

2. PAGE:[2] Male, 25. Overheated and then wet in rain; pain in back and legs; ascending paralysis on the third day; numbness and tingling in legs and feet; retention of urine; rectal sphincters paralyzed; reflexes absent; moderate fever; mind clear; death after 108 hours from respiratory paralysis.

3. DILLER and BILLARD:[3] Male, 17. Ascending paralysis, complete on second day; severe pain in back; retention; no sensory phenomena; in hospital nearly two months; full recovery.

4. DILLER and BILLARD:[3] Male, 20. First attack, motor paralysis of legs and arms; sensation not involved; sphincters normal; no mental symptoms; recovery in three months. Second attack, twenty months later; paralysis complete in fifteen

1. Brit. Med. Jour. 1905, p. 18.
2. Austral. Med. Gaz., Sydney, 1904, July 20, p. 348.
3. St. Louis Med. Rev., 1905, April 15, p. 289.

hours; reflexes absent; no sensory involvement; death in five days.

5. MCNAMARA, E. D.:[4] Male, 30. History of syphilis; paralysis complete in three days; reflexes absent; no sensory involvement; electrical reactions normal; pupils scarcely react to light; defective articulation; double vision; gradual recovery.

6. BRAMWELL:[5] Female, married. Pain in back; bilateral facial palsy; ascending paralysis afterward; reflexes absent; cold, numbness and hyperalgesia in legs; eyes normal; delirium; no fever; death on the eighteenth day.

Autopsy.—At postmortem the gray matter of the brain and cord was congested. Pronounced changes were found in both seventh nuclei and in cells of lower part of cord. Degeneration in right facial and external popliteal nerves. Although staphylococci were found in the throat during life, the blood, spinal fluid, spleen, cord, etc., were negative. Bramwell states that "the postmortem examination leads him to believe there may have been a toxic process acting on the lower neurons which originated from a sore throat of some time before paralytic symptoms appeared."

7. MAXWELL:[6] Chinese, male, 16. Failure of vision one week before and complete motor paralysis, and retention of urine ten days before; gonorrhea; cystitis; reflexes lost; some impairment of sensation; no fever of note; no wasting of paralyzed muscles; death after three weeks from respiratory paralysis.

8. TULEY:[7] Female, 2 years. Moderate fever; ascending motor paralysis; reflexes lost; sphincters intact; no sensory involvement; death in three days from respiratory paralysis.

9. ZEIT, F. R.:[8] Male, 24. Ascending motor paralysis; slight involvement of sensation; sphincters involved; cystitis; reflexes lost; moderate fever, till near death, then 108.8; pulse, 160; respiration, 44; sweating; sudamnia; duration twelve days.

Autopsy.—Brain showed no external change except hyperemia of the pia. Spinal cord showed redness of gray matter at various levels.

Anatomic Diagnosis: Hemorrhagic poliomyelitis; purulent cystitis; hyperemia of viscera; pulmonary edema and hypostatic congestion; fibrous pleuritis and fibrous pericarditis; edema of back; bed sores over sacrum.

Bacteriologic Examination: Heart blood showed encapsulated diplococci arranged in chains; stained by Gram's method. Seven days later one blood-agar tube, suspended in 4 c.cm. of bouillon, was injected in a rabbit; animal sick three days, but recovered.

Cord: Emulsions were made in salt solution and various media inoculated. Only colon bacillus obtained. Same with sciatic nerve.

Liver: Pneumococcus and *Staphylococcus cereus flava* found.

Peritoneal Fluid: Pneumococcus and *Bacillus coli communis* obtained.

Spleen: *B. coli communis* found.

Histologic Examination: This showed some degeneration of the nerves; no sign of neuritis; brain almost normal.

10. WALKER, T. J.:[9] Male, 40. Had long suffered from stricture, with frequent retention of urine; sudden ascending paralysis; numbness and tingling in feet; death after eighteen hours.

11. WALKER, T. J.:[9] Male, 62. Cystitis for years; death in forty-eight hours from acute ascending paralysis; "uncomfortable sensations in lower limbs."

12. WALKER, T. J.:[9] Male, 67. Chronic cystitis for many years; acute ascending paralysis fatal after eighteen hours.

13. DONATH:[10] Male, 26. Total paralysis of extremities; bulbar paralysis; sensation decreased below third rib, absent in legs; backache and headache at first; incontinence; deep reflexes lost; Babinski present; recovery after three months.

14. LORISCH:[11] Female, 48. Tabes dorsalis; acute ascending paralysis, fatal after eight days from respiratory paralysis; no fever; no sensory phenomena; cranial nerves involved.

Author's Summary of Autopsy.—The anatomic basis for the ascending paralysis is the acute affection of the gray matter in all parts of the spinal cord and medulla oblongata, characterized by hemorrhages, disappearance of the medullary sheaths, degeneration of ganglion cells with consecutive degeneration of anterior roots. Therefore, we have to deal with an acute diffuse disseminated poliomyelitis in which the motor portion of the gray matter is more involved than the sensory. These conditions satisfactorily explain the clinically rapid course. The disease evidently began in the lumbar region, ascended rapidly, and lastly involved the medulla oblongata. This case, therefore, is one of those in which palpable lesions of myelitic nature existed in the spinal cord and medulla oblongata.

15. MCCARTHY, D. J.:[12] Male, 35. Advanced tuberculosis; ascending paralysis; slight sensory involvement; reflexes absent; died on the eleventh day from respiratory paralysis.

Author's Autopsy Note.—The lesions in this case are therefore entirely confined to the motor ganglion cells of the spinal cord and medulla.

16. GARDINIER, H. C.:[13] Female, 42. Ascending paralysis; no disturbance of sensation; duration nine days; fatal from respiratory paralysis; changes in ventral horns of cervical and lumbar regions of cord; thrombi; degeneration of peripheral nerves, Wallerian type; axones appeared atrophied; bacteriologic examination negative.

17. GARDINIER, H. C.:[13] Male, 38. Lagrippe on October 6; on October 10, paralysis of the legs, delirium; October 12, paralyzed below neck; incontinence of urine; sweating; no bulbar symptoms; October 14, regained control of sphincters; reflexes absent; no sensory phenomena; recovered in three months.

18. NAZARI:[14] Female, 46. No known cause; formication; restlessness, dyspnea, insomnia; acute ascending motor paralysis; dysphagia; death in a few days.

STATISTICAL SUMMARIES.

A summary of these 23 cases gives the following results:

OCCUPATION.

No occupation	4	Nurse, barber, salesman, merchant, miner, waiter, roofer, of each	1
Farmer	3		
Laborer	3		
Butcher	2		23
Housewife	2		
Schoolboy	2		

AGE.

1st decade	3	7th decade	3
2nd "	3	Not given	1
3rd "	6		
4th "	4		23
5th "	3		

CAUSE.[15]

Undetermined	13	Alcohol and syphilis, tuberculosis, rheumatism, lagrippe, of each	1
Cystitis	4		
Exposure	2		

CHARACTER OF MUSCULAR PARALYSIS.

In legs, and ascending	22	In hands and arms, and ascending	1

IMPAIRMENT OF SENSATION.

None	11	Not recorded	2
Slight impairment (Including 5 in which there was numb and tingling sensation.)	10		

DEEP REFLEXES.

Lost	13	Decreased	1
Not recorded	10		

SUPERFICIAL REFLEXES.

Lost	11	Decreased	1
Not recorded	10	Babinski reflex was positive in one case.	
Present	1		

ELECTRICAL REACTION.

Not recorded	20	Lost Faradic and R. of D.	1
Normal	2		

4. Trans. Clin. Soc., Lond., 1905, xxxviii, p. 194.
5. Rev. Neur. and Psych., Edin., iii, p. 327.
6. St. Barth. Hosp. Rep., 1904, xl, p. 49.
7. Kentucky Med. Jour., 1904, September, p. 112.
8. Trans. Chic. Path. Soc., 1904, Nov. 14, p. 97.
9. Trans. Clin. Soc., Lond., 1905, xxxviii, p. 80.
10. Wien klin. Wochsch., xviii, (s. v.), p. 1327.
11. Arch. f. Psych., 1905, xl, p. 422.
12. Trans. National Assn. for the Study and Prevention of Tuberculosis, 1, p. 243.
13. Albany Med. Annals., 1904, xxv, p. 56.
14. Il Policlinico, August, 1904, p. 337.
15. In examining the figures given it must be noted that one of these subjects suffered from two attacks.

PAIN.

Present	9	The pain was present in the lower back, thighs and legs, and in one of our cases in the testicles also.	
(And in one other case due to tabes.)			
Absent	9		
Not recorded	4		

ATROPHY.

Present	1	It is evident that atrophy is rarely or never noted, excepting in cases of recovery.	
(Our own case.)			
Absent	14		
Not recorded	8		

TROPHIC DISTURBANCES.

Blisters and Bedsores:

Present	3	Absent	9
Remainder not recorded.			

Sweating:

Present	3	Remainder not recorded.	
Absent	9		

Pulse:

Generally below 100	3	Remainder not recorded.	
Above 100	7		

Temperature:

Generally normal	6	High	3
Moderate (below 102)	5	Remainder not recorded.	

Since 8 out of 23 showed considerable fever, it is evident that the disease can not be regarded as generally afebrile, as is so commonly stated.

Respiration:

High	5	Not recorded	13
Moderate (32 or less)	4	Cheyne-Stokes	1

Bladder:

Retention	9	Not involved	4
Incontinence	5	Not recorded	5

Bowel Control:

Incontinence	8	Not involved	5
Spasm of sphincter	1	Not recorded	9

Constipation:

Present	6	Not recorded	10
Absent	7		

Delirium:

Present	4	Not recorded	7
Absent	12		

Urine:

Normal	15	Not recorded	7
Albumin	1		

Eruption:

Although eruptions of different characters have been reported, none was present in any of these cases, excepting a sudaminal eruption in one case, evidently of no specific importance since it occurred in conjunction with profuse perspiration.

Eyes and Special Senses:

Ocular paralysis	1	Nystagmus	1
Optic neuritis	1	Inequality of pupils	1
(And dilated pupils were noted in the same case.)		Impaired speech	1
		Impaired speech and hearing.	1

Lumbar puncture was employed in but one case, that of Donath, 3 c.c. being removed. The fluid coagulated at once. Bacteriologic examination was negative. The fluid contained fibrinogen and albumose.

DURATION.

1 day	2	16 days	2
2 days	1	17 days	1
3 days	2	21 days	1
5 days	3	2 months (recovered)	1
7 days	1	3 months (recovered)	3
8 days	1	4 months (recovered)	1
9 days	2	6 months (recovered)	1
12 days	1	(Note two attacks in one.)	
15 days	1		

RESULT.

Recovery	7	Death	17
(Patient 4 recovered from a first attack and died in a second one, occurring 20 months later, after an illness of 5 days.)			

We have also analyzed the imperfect data obtainable from H. Martinette's Paris Thesis, 1897, "La Paralysie Ascendante Aigue, 80 Paris," after throwing out 17 cases which appear to us, in the light of modern study, wholly inadmissible.

AGE.

1st decade	5	6th decade	7
2nd decade	7	7th decade	2
3rd decade	9	Not given	4
4th decade	11		
5th decade	9		54

SEX.

Male	14	Female	13

OCCUPATION.

Servants	3	Mechanic	1
Soldiers	3	Schoolboys	2
Laborers	3	Not given	42

CAUSE.

Typhoid fever	3	Toxemia	1
Exposure	3	Scarlet fever	1
Pneumonia	2	Syphilis	1
Diarrhea	2	Rheumatism	1
Alcohol	2	Small pox	1
Influenza	2	Not recorded	34
CO_2 poisoning	1		

The type of paralysis was ascending in every one of these cases.

SENSATION.

Normal	29	Lost	2
Impaired	16	Not recorded	7

PAIN.

Present	13	Absent	2
Remainder not recorded.			

TROPHIC DISTURBANCES.

Bladder:

Retention	3	Not involved	22
Incontinence	8	Remainder not recorded.	

Bowel Control:

Normal	24	Spastic condition of the sphincter	1
Incontinence	7	Constipation	3

DURATION.

1 case	10 mos.	1 case	18 days
2 cases	7 mos.	3 cases	15 days
1 case	6 mos.	2 cases	13 days
2 cases	5 mos.	3 cases	12 days
1 case	6 mos.	2 cases	11 days
2 cases	5 mos.	2 cases	10 days
1 case	11 wks.	1 case	8 days
1 case	3 wks.	5 cases	7 days
1 case	6 wks.	1 case	6 days
3 cases	5 wks.	7 cases	5 days
2 cases	4 wks.	2 cases	4 days
1 case	3 wks.	1 case	3 days
Remainder not recorded.			

RESULT.

Death	37	Not recorded	6
Recovery	11		

In comparing our own cases with the earlier group we find the percentage of males in ours to have been 74 per cent.; in Martinette's, 76 per cent., approximately. These figures seem to accord very well with the general consensus of opinion. From the variety of occupations in each series, it seems safe to assume that the disease has no especial relation to any occupation. In Martinette's cases, 29 out of 50 cases were in the third, fourth and fifth decades, a percenage of 58. In our own, 13 out of 23 cases were within the limits given, a percentage of 56.5. No cause is given in the majority of cases in both reports, but we have here collected for comparison all those in which the supposed cause was mentioned.

Cause.	Martinette.	Authors.	Cause.	Martinette.	Authors.
Typhoid	3	0	Scarlet fever	1	0
Exposure	3	2	Syphilis	1	0
Pneumonia	2	0	Rheumatism	1	1
Diarrhea	2	0	Smallpox	1	0
Alcohol	2	1	Tuberculosis	0	1
Influenza	2	1	Cystitis	0	4
CO_2 poisoning	1	0	Remainder unrecorded.		

It is striking to note that whenever a cause is given, aside from exposure, a toxic or infectious condition existed. Gowers mentions the striking similarity in causation to that of ordinary multiple neuritis.

ETIOLOGY.

Concerning the etiology of Landry's disease, Donath[16] states:

There occur, aside from undoubted infections, also typical intoxications. There have been found anthrax and typhoid bacilli, streptococci, staphylococci, diplococci, the Fraenkel-Weischselbaum bacterium, pneumococcus, and also a proteus pathogenic in animals.

Influenza, variola, syphilis, diphtheria, pertussis and also the gonococcus have been associated with Landry's paralysis, and Donath himself reported a case following malaria.

Thoinot and Maselli state:

Affections similar to Landry's paralysis have been produced in animals by the introduction of the micro-organisms into the blood.

16. Donath, Julius: Wien. klin. Wochschr., 1905, xviii, (s. v.), pp. 1327 to 1330.

The action of the toxins was the cause of the infectious paralyses, as has been demonstrated by Roux and Yersin and also by Babonneix on the diphtheria toxin. Babonneix found the anatomic lesions in dogs (with Landry's paralysis), necrotic areas in the spinal cord, especially in the gray matter of lumbar region, accompanied by acute cellular atrophy, chromatolysis and changes in the nuclei. The less pronounced involvement of the anterior and posterior roots appeared to be of secondary nature.

Donath further states:

The toxic action of constipation following intestinal diseases, gastric diseases, and carcinoma of pylorus, and also chronic cystitis deserves consideration in the etiology of Landry's paralysis. A purely toxic action is evidenced in Landry's paralysis due to alcoholism. A fatal case of this kind was recently reported by Aberthur and Arthur. Ketley reported a case of fatal typical Landry's paralysis resulting from poisoning by corrosive sublimate. It was accompanied by loss of reflexes and loss of sensation, while autopsical findings showed only general anemia.

Gowers mentions one case apparently due to syphilis, the patient recovering under antisyphilitic treatment. Dr. Hall records a case of similar nature, seen with Dr. Conway, Cheyenne, Wyo., but not sufficiently clear to be included in this report, in which a partial recovery followed heroic treatment with iodids and mercury.

The group of cases reported by T. J. Walker following cystitis and urinary infections is worthy of careful consideration. Walker believes the cause to be a bacterial infection originating in the bladder, and, as a result, a virulent intoxication of cells in the cord already weakened by the long-standing cystitis.

As regards bacteriology, Aubertin[17] reports:

Bacteria found in cases of Landry's paralysis have been variable, as follows: In one case, diphtheria and staphylococci; in two cases, the streptococcus (Ettinger and Marinesco, Remlinger); in two cases, the pneumococcus (Seitz, Roger and Josue); in two cases, the bacillus of charbon (Baumgarten, Marie and Marinesco); in two cases, the staphylococcus (including Bramwell's); in two cases, the bacillus of Eberth; in six cases, unidentified bacilli have been found.

It is obvious that no especial bacterial intoxication can be the cause of this rare disease.

PATHOLOGY.

The character of the muscular paralysis in the cases we have admitted was ascending in every instance, always beginning in the legs, excepting in one of our own series in which the hands and arms were first affected, then ascending to the bulb.

Sensation was normal in 53.7 per cent. of Martinette's cases, in which record was made, and in 52 per cent. of our own series. In no case of ours was anything more than slight impairment noted, although in two of Martinette's admitted cases complete loss was observed. Pain was present in 9 of our cases and 13 of Martinette's series, but not noted in the great majority. We can not compare the reflexes, electrical reactions, atrophy, trophic disturbances, eruptions, special senses, temperature, pulse and respiration, sweating or several other features, for the records are absent or incomplete in the earlier series.

Much dispute still exists as to the involvement of the sphincters in Landry's paralysis. In our own series, retention of urine existed in 9 cases and incontinence in 5, while in Martinette's series incontinence was noted in 8 cases and retention in 3. In most of his cases, however, no note was made. It is very striking that, in 14 out of the 18 cases in our series in which record was made the bladder was involved and 9 out of 14 the rectal sphincter. This is not at all in accord with the statement of Oppenheim that "the bladder and rectal functions are, as a rule, not disturbed, though there are exceptions," nor with Gowers, who says, "The sphincters, moreover, escape in the vast majority of cases, but not in all," nor with Church and Peterson, who state that "the sphincters, as a rule, are not relaxed," nor with Starr, who states that "the bladder and rectum usually remain in a normal condition." Dana says: "The bladder and rectum are involved only in rare cases." Sajous: "Paralysis of the trunk muscles follows, the sphincters escaping." We must conclude that in the carefully reported modern cases involvement of the sphincters is present in a majority.

17. "Bacteriologie de la Paralysie de Landry," La Tribune Med., 1905, Jan. 14, p. 22.

DURATION.

A comparison of the duration when recorded in the two series results as follows:

	Martinette.	Hall and Hopkins.
One week or less	16	9 (all fatal).
More than 1 week or less than 2 weeks	10	4 (all but 1 fatal).
More than 2 weeks and less than 2 months	12	5 (all fatal).
Over 2 months	10	6 (all recovered).

It is to be observed that in our own series all the fatalities occurred within two months, and this practically held true in Martinette's cases.

MORTALITY.

In the 24 attacks in our series, there were 7 fatalities, a recovery rate of 29 per cent. In Martinette's series, 11 recoveries are recorded out of 48 in which the result is known, a rate of 22.9 per cent. It is fair to conclude that, on an average, 75 per cent. of the cases are fatal.

CONCLUSIONS.

Our conclusions as to the pathology and nature of the disease, after careful study and comparison of the autopsy reports above quoted and of the general literature, might be summarized in this quotation from Oppenheim:

On the whole, late researches, founded on the new methods, have always given positive results; and particularly alterations in the spinal cord, especially of the gray matter. They were either inflammatory and vascular conditions . . . or alterations of the nerve cells, which, rarely, however, reached the degree of distinct atrophy. . . . The clinical picture is sufficiently clear and characteristic, and there is no doubt that it is due to infectious causes and toxins, which in most cases are bacterial products. The disease may develop after diphtheria, typhoid, variola, anthrax, influenza, pneumonia, whooping-cough, puerperium, gonorrhea (?), probably also septicemia and other unknown infectious processes. It seems to be able to occur in rabies or following on Pasteur's treatment. . . . Alcoholism, and particularly syphilis, have been considered etiologic factors.

Whether the entrance of the micro-organisms into the spinal cord, medulla oblongata, and peripheral nervous system is able to produce the disease, is doubtful. It is probable that the poison injures the motor conducting tracts of the spinal cord, medulla oblongata, and peripheral nerves, so that it evokes paralysis without exciting any recognizable lesions in the nervous apparatus, but that it occasionally leaves visible (microscopically detectable) lesions, found in the motor tracts of the medulla, or in the peripheral nerves, or in both places.

Differential Diagnosis.—We can not give a better idea of our conception of Landry's paralysis than the summary of the symptoms given in the third paragraph of this article. Confusion is likely to arise only with acute ascending myelitis, multiple neuritis and anterior polio-

myelitis. Acute ascending myelitis may be recognized by the presence of the complete sensory paralysis below the point involved, the tendency to trophic disturbances in the skin, if the patient lives long enough, the wasting of muscles and the loss of faradic irritability. In multiple neuritis the sphincters are not involved, the paralysis is ordinarily limited to peripheral muscles, and there are very marked pain, tenderness, and disturbance in sensation. Gowers says:

The mysterious disease, acute ascending paralysis, may resemble the most rapid cases of multiple neuritis, but in it, the symptoms ascend the trunk from the legs to the arms, and do not begin in the hands and feet at the same time or successively, and involve the trunk last as does the usual form of multiple neuritis.

In acute anterior poliomyelitis, the paralysis is limited to certain groups of muscles, and affects the extremities, especially the lower ones, without involvement of sensation. Marked wasting of the affected muscles occurs, with the presence of electrical changes, and there is an immediate tendency toward improvement, in marked contrast to the progressive course of the more serious disease.

Treatment.—The treatment of the disease is not satisfactory. In general it must be chiefly supportive. The bladder, if involved, must be most carefully irrigated, and urotropin given if urinary infection threatens. In our own case, in which the patient recovered, Dr. Call gave salicylate of soda, which was followed by iodid of potash and mercurial inunction, in spite of the absence of syphilis. Later, large doses of strychnin were given, with the Faradic current and massage to the paralyzed muscles. Three-dram doses of fluid extract of cascara were needed in the early stages, owing to the profound torpor of the intestines, while later ½-dram doses sufficed. In the other cases we report the course was so rapid that no effect could be observed from any treatment.

DISCUSSION.

DR. L. H. METTLER, Chicago, said that the query always arises in his mind: What is Landry's paralysis? Two or three years ago he published a paper in THE JOURNAL A. M. A., in which he tried to cover the whole ground. In that paper he emphasized the fact that under the term Landry's paralysis too many conditions are included and that Landry himself never included among his cases any in which there was involvement of the sphincters. Landry's clinical picture was a clear, sharp, well-defined one, entirely motor, without sensory symptoms. It may be called ascending or acute paralysis, but Dr. Mettler thinks that great care should be used not to call all cases of ascending paralysis, with other collateral symptoms, Landry's paralysis.

DR. WHARTON SINKLER, Philadelphia, said that he had gone over the literature of Landry's paralysis in connection with a case he reported at the recent meeting of the American Neurological Association, and he was struck by what has also been the observation of Drs. Hall and Hopkins that there is great confusion as to what acute ascending paralysis or Landry's paralysis really is. Even in the text-books there seems to be a lack of accord on this subject. The conclusion he has come to is that, in order to follow Landry, the patient must have an ascending paralysis with acute onset, but without sensory symptoms, and without involvement of the sphincters, the case ending either in death in a short time or, in a small proportion of cases, in recovery, the convalescence being more or less gradual. In the case which he reported the recovery was rather rapid, although the paralysis was complete and general, involving not only the legs and arms, but the facial muscles and the muscles of deglutition. If one leg were flexed, the patient could extend it, but this was the extent of the voluntary muscle power for a few days. The complete loss of power lasted but a week, and recovery began in the parts last affected. This seems to be the general rule with patients who recover. The condition of the bladder and rectum is characteristic in cases of Landry's paralysis, for these organs are not involved. In the case to which Dr. Sinkler referred, the patient, although completely paralyzed, had no loss of control of these organs; the only abnormal sensation in connection with the bladder was that the patient did not know when he had finished urinating.

DR. J. N. HALL, Denver, said that he thinks it is time that the neurologists should assist in the diagnosis of these cases of Landry's paralysis. He believes that there is an acute ascending paralysis, which sometimes occurs in two forms: In the one there is practically no involvement of the sphincters nor any sensory involvement, in the other there is such involvement. In a very considerable proportion of the cases, about one-third, there was considerable pain, which, to Dr. Hall's knowledge, is a symptom not spoken of very frequently. In his last case there was violent pain in the left testicle. The term Landry's paralysis evidently does not cover all cases of acute ascending paralysis.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

WITH A REPORT OF FIFTY-SIX OPERATIONS.*

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The familiarity of the members of this Section with the history of the submucous resection of the septum and the principles underlying the operation enables me to devote the time allotted for this paper to an account of my personal work during the last ten months and to some practical deductions from my experience in dealing with the fifty-six cases operated on.

CLASSIFICATION OF CASES.

Of the fifty-six cases, forty-one were males and fifteen females. Five were between the ages of 10 and 19, eighteen between the ages of 20 and 29, seventeen between the ages of 30 and 39, twelve between the ages of 40 and 49, and four between the ages of 50 and 57. The youngest patient was 10 years of age, the oldest 57.

I have followed the classification of Freer, which is based on the form of the deflection rather than on its cause. He reports finding a preponderance of the double-angled variety in which there is a distinct, vertical deflection meeting a horizontal deflection at an angle near the floor of the nose. Only five of my cases were of this form. The crest-like deflections of his nomenclature were in the majority, there being thirty-six. In this form the crest usually followed the superior border of the vomer. These crest-like deflections often extended very nearly to the posterior border of the vomer, and in nine cases they ended in marked spur-like deflections pressing against the posterior end of the inferior turbinate and causing considerable obstruction. The extreme posterior border of the vomer, however, as viewed by posterior rhinoscopy, was usually in the median line. In fourteen of the crest-like deflections there were also deflections on the opposite side of the septum higher up in the region of the middle turbinates, forming what might be described as a vertically sigmoid deflection. Ten of the deflections were of the bowed, or C-shaped, variety in which a large part of the septum was bent to one side, encroaching on both the middle and inferior turbinates of the same side. In five cases the antero-inferior border of the quadrangular carti-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

lage was dislocated into one nostril where, together with the ala of the nose, it formed a valve-like obstacle to inspiration. In these cases the main part of the deflection was usually on the opposite side of the septum. A few of the deflections were of irregular form not easily classified.

Both inferior and middle turbinates were encroached on in thirty-six cases, the inferior alone was crowded on in eighteen cases, and the middle alone in two cases. The deflections consisted of both bone and cartilage in fifty-one cases, in each of which I resected the deflected bone as well as the deflected cartilage. In only three cases were the deflections purely cartilaginous, and in two they were confined to the bone. The septum was considerably thickened in eight cases. In four of these the deflections were of traumatic origin, and in the others the thickened bone was at the apex of marked deflections in the posterior part of the septum. There was often some thickening of both the cartilage and the perpendicular plate of the ethmoid near their line of union in the region of the anterior ends of the middle turbinates. But after passing their line of union the perpendicular plate, as a rule, became quite thin. Removal of this thickened area often relieved the pressure of the septum against the middle turbinates. The anterior end of the vomer was also somewhat thickened in a number of cases. But this often appeared much thicker than it really was on account of ledges of cartilage extending below the superior border of the vomer and resting on its side.

INDICATIONS FOR THE OPERATION.

It would be tedious to reiterate the far-reaching consequences of insufficient breathing space in the nose or of marked inequality of breathing capacity in its two sides. In the recent triumphs of the "cold air cure," not only in tuberculosis, but also in many other chronic ailments, we have a most convincing argument in favor of unobstructed respiratory passages. It is becoming more and more apparent that the nose is not only the key to the situation in many chronic affections of the ears, the accessory sinuses, and the respiratory tract below, but that it may be an important factor in many other chronic diseases. The internist recognizes the important rôle played by improperly oxidized by-products of digestion and metabolism in many chronic ailments. Improved alimentation may limit the production of these poisons, but oxygen is indispensable for reducing them to harmless end-products. The body needs an abundant air supply not only to produce heat and support energy, but also to complete the oxidation of the products of destructive metabolism, so as to secure their prompt and perfect elimination and thereby prevent degenerative changes.

In nasal obstruction we often have to decide whether to operate on an enlarged turbinate or on a deformed septum. On account of the former unsatisfactory methods of straightening the septum, doubtless many turbinates were sacrificed which would now be spared with better means for correcting septal deviations. If nasal obstruction is sufficiently marked to require any operation and it can be relieved by correcting the septal deviation, I believe that the submucous resection of the septum is preferable to cutting off the inferior turbinate. In these erectile bodies we have an important functional tissue. If they are intumescent from being crowded on, either by a septal ridge or by a bony enlargement of the middle turbinate, they often assume their normal proportions after such pressure is relieved.

The results obtained by the submucous resection of the septum will doubtless give it the preference over the older straightening operations, such as the Asch or Watson-Gleason operation. The question may well be raised whether sawing off a spur or crest is ever preferable to submucous resection. The insight into the septal skeleton afforded by the submucous resection has taught us, as suggested by Freer, that crests and spurs are seldom solid projections of bone from a plane septum, but that they are usually deflections of comparatively thin bone. If the crest is simply sawed off or chiseled away, the main part of the deflection will remain to obstruct the naris, or, if an attempt is made thoroughly to remove it, a perforation is likely to be made. When the mucoperichondrium covering the crest is thus completely destroyed there is likely to result a dry, scabbing area at the point of the operation. For the epithelial covering which afterward grows over the granulating wound is not equivalent to the original mucosa in secreting power. This condition is aggravated by the fact that the deflection is not completely removed and the atrophic spot is consequently in a prominent position and directly exposed to the desiccating action of the inspired air. If the spur is situated well back where the mucous membrane is more moist, a scabby condition is less likely to result from sawing it off.

METHOD OF OPERATING.

The principles underlying the various operations now in vogue are much the same, except in two particulars, the manner of making the initial incision in the mucous membrane and the character of the instruments used. In choosing a method and in selecting instruments I have been guided more by a desire to correct the deformity completely and permanently than to do the operation in the shortest possible time, realizing that the operation once done can not well be done over. As I have used Freer's instruments and followed his technic mainly, I shall not enter into the details of the several steps of the operation, but simply refer you to his lucid and comprehensive papers.[1]

A good chair and an electric head lamp add much to the ease of operating, as well as to the comfort of the patient. I use a modern dental chair, finished in leather, which is adjustable to all positions and can be easily raised or lowered by a foot lever. If the patient is faint at the beginning of the operation, his head may be lowered, if necessary, to a point much lower than his feet. Laying the patient down need not interrupt the operation, for the electric head lamp makes one independent of an outside source of light. The operator stands on the same side of the chair as the side being operated on, with the patient in a slightly reclining position.

Freer's method of local anesthesia was used in each case. Each side of the septum is first swabbed with a 1/1000 solution of adrenalin, and this is followed in about three minutes with an application of pure powdered cocain rubbed on to the mucous membrane by means of a swab moistened in the adrenalin solution. The absorption of the cocain is largely prevented by the contraction of the blood vessels produced by the preliminary application of adrenalin, and thus the effect of the anesthetic is practically limited to the field of the operation, while the use of the pure cocain undiluted

1. Annals of Otology, Rhinology and Laryngology, June, 1905. THE JOURNAL A. M. A., Sept. 30, 1905, and Fraenkel's Archiv für Laryn., vol. xviii, 1906.

produces profound anesthesia. I supplemented this method by the injection of Schleich's solution beneath the perichondrium in only six cases in which the resection was from the antero-inferior edge of the cartilage. General anesthesia was not used in any case. My patients have seldom complained of pain, and then it has been from the jarring incident to the removal of thickened bone. In one of the most tedious cases, lasting an hour and forty-five minutes, the patient, a boy of only 10 years, insisted that the operation was not painful. No symptoms of cocain poisoning have been observed. Some caution should be observed in applying either the adrenalin or the cocain too frequently. One or two thorough applications of the cocain following a single application of the adrenalin to each side of the septum are usually all that will be required for the operation. Too frequent applications, I believe, impair the vitality of the membranes and may be a cause of marked superficial inflammation following the operation. Troublesome hemorrhage during the operation was present in only two cases, in one of which another preparation of the suprarenal gland than adrenalin was used.

In choosing the side from which to operate I am influenced entirely by the shape of the deflection, for one can operate with his right hand as easily in the right nostril as in the left, provided he stands on the same side of the chair as the side being operated on. It would, of course, be awkward to operate with the right hand in the right nostril if the operator sits in front of the patient who is seated in an ordinary rhinologic chair. I do not always operate on the side of greatest convexity. There is usually no difficulty in operating on the side of concavity if the deflection is located in the posterior or superior part of the naris, but it is particularly tedious to operate on the concave side of a deflection at the anterior end of the vomer. I operate, therefore, as a rule, on the side which has the greater convexity at the anterior end of the vomer, provided this convexity is of sufficient size to require removal. The right side was operated on in twenty cases, the left in thirty-three cases, and both sides were incised in three cases.

I have tried retractors and a number of nasal specula, but nothing has been found so convenient as the DeVilbiss self-retaining speculum. With it one can operate without assistance, except a nurse to handle instruments and use the mallet when the anterior end of the vomer and crista are being chiseled away. A good view of the space between the membranes may be had during forced inspiration, provided the initial incision has been made in the anterior part of the septum. The various long-bladed specula for holding the membranes apart have proved to be a hindrance in my hands rather than a help. The thin elevators, which are used for separating the mucous membrane, may be employed to hold the mucoperichondrium to one side if necessary for deep inspection. If a flap needs to be held out of the way, a thread may be passed through it and tied over the patient's ear, or if it is a superior flap, such as is sometimes made in marked crest-like deflections, it may be tucked into the upper part of the naris out of the way.

There is more difference of opinion possibly as to the position of the initial incision in the mucous membrane than in any other part of the operation. Killian makes a single, linear incision in the anterior part of the septum from the floor of the nose upward and forward, beginning a half centimeter back of the edge of the cartilage. He makes this incision, it appears, in all cases, no matter what the character of the deflection may be, except when the antero-inferior edge of the cartilage deviates from the median line, in which case he makes the incision follow the antero-inferior edge of the cartilage, as does Hajek in all cases. Instead of this single, linear incision at the front of the septum, anterior to the deflection, Freer makes his incision "follow the summit of the angle or angles of deviation wherever they may be, except in deep-seated crest-like deflections," when he also makes a vertical incision in front of the deflection. The most common deflection encountered by Freer was the double-angled variety, having both a vertical and a horizontal angle. In these cases he makes a vertical incision following the summit of the vertical angle and a horizontal incision from the foot of the first incision forward, following the summit of the horizontal angle, if it is pronounced, otherwise the floor of the nose is followed. Thus in the majority of his cases he dissects an anterior flap having the shape of an inverted L. When there is a horizontal, crest-like deflection, beginning well in front, but with no vertical angle, his incision extends from behind along the summit of the crest, and then turns upward at the anterior part of the septum, thus forming a superior flap. If this type of deflection is seated more deeply in the naris, behind the nasal vestibule, he simply makes a vertical incision in front of the deflection.

I have followed Freer's principle of making the incision follow the summit of the angle or angles of deviation, when the angles are very pronounced or sharp and at the same time situated in the anterior part of the septum. But when the deviations are not pronounced in the anterior part of the septum, I prefer to make the incision in front of the deflection. For this reason and also because I have encountered but few deflections having sharp vertical angles, I have seldom made the L-shaped flap, though in a few cases, having pronounced vertical deflections, it has proved to be an excellent procedure. In the majority of my cases a single incision was made in front of the deflection. It was more nearly vertical than Killian's incision, being located farther back at the top, and care was taken to extend it fully to the floor of the nose so that dissection of the membrane below the summit of the crest could be begun beneath the periosteum near the floor of the nose.

In the case of marked horizontal, crest-like deflections, there is more reason for incising the membrane along the summit of the ridge than in vertical deflections, for it is very difficult to separate the membrane from these crests, and in attempting to make the dissection without an incision along the summit of the crest, one is apt to perforate the membrane. If a horizontal, crest-like deflection, therefore, is pronounced and extends well forward, I believe the membrane will usually be better preserved by making an incision along the summit of the crest than by trying to make the resection through a button-hole incision at the front. The objections which have been made to extending the incision backward, I believe, have been overestimated. A strip or two of lint on the floor of the nose, beneath the interior flap, holds the latter in apposition to the superior flap, and healing by first intention without continued crusting has been the rule in my cases. Moreover, there is an advantage in having a slit in the membrane posteriorly, for if the packing is not inserted with uniform pressure on the different parts of the septum there may be more or less bleeding and accumulation of blood between the membranes. The packing prevents the blood reaching an anterior incision, and if there is no

opening in the membrane posteriorly the blood remains in the intraperichondrial space to delay healing and possibly produce permanent thickening of the septum. With a slit in the posterior part of the membrane it finds exit and is absorbed by the dressing. For this reason I often purposely make an opening in the posterior part of the membrane when the resection has been made entirely through an anterior incision.

When the antero-inferior edge of the cartilage deviates into one nostril, I begin the resection by a mucous membrane incision following the free border of the cartilage, from which incision I dissect out as much of the bent tip as will remove the obstruction it has created in the nostril into which it has protruded. I then begin the resection of the deeper portion of the deflection, whose convexity projects into the other nostril, by a mucous membrane incision in that nostril, made in the usual manner already described, just as if there had been no deflected free border to resect. The cartilage is then cut through from this side and in such a manner as to leave an intact strip between the end of the resection of the dislocated tip and the beginning of the window made in the other nostril, this strip being designed to give support to the tip of the nose. This may not be necessary, though I prefer to leave some support at this point.

The elevators used for separating the perichondrium are generally of a heavier type than Freer's. When the deflection is not marked and the perichondrium separates easily, the heavier elevators make the separation rapidly, but I have found Freer's thin, slightly curved elevators more practical when the deflections were marked, especially when the septum was in firm contact with the turbinate, making it difficult to introduce any instrument between them. His round-bladed knife bent on edge, has been especially useful in separating the periosteum from the concave side of the vomer, which is sometimes a difficult task. The claim has recently been put forward that keen-bladed instruments are seldom necessary for the separation of the membranes. I have not often found keen dissection necessary above the superior border of the vomer, but on account of the periosteum on the two sides of the vomer being continuous with, and connected by, a fibrous band of connective tissue lying between the vomer and the cartilage, especially in the anterior part, I have found it difficult or impossible to separate the periosteum of the vomer without sharp instruments, and as the great majority of the deflections encountered have included the vomer, keen-bladed instruments have been used in nearly every case. The separation of the periosteum below the crest on the convex side is more readily effected by introducing the thin-bladed elevator beneath the periosteum near the floor of the nose, and continuing the separation upward to the summit of the crest.

For making the first incision through the cartilage I prefer a sharp-cutting instrument, such as Freer's half-round, straight knife, held lightly in the hand, and obliquely to the surface of the cartilage. I no longer insert my finger in the opposite nostril, but determine when the knife is through the cartilage by the resistance offered to the knife. In beginning the elevation of the opposite perichondrium the procedure should be watched through the other nostril, and in this step of the operation the beginner will do well to "make haste slowly," for it is very easy with the sharp dissector to plunge through the perichondrium, mucosa and all. A perforation of the mucoperichondrium at this point makes the rest of the operation much more tedious and difficult, and if the rent in the membrane is not carefully covered by the opposite membrane when the packing is inserted, a permanent perforation of the septum will result.

Ballenger's swivel knife has been used for the removal of the cartilaginous part of the deflection in the majority of the operations. This instrument makes this part of the operation very short, but it is possible to do some damage with it. A report of my experience in one case may help some one else to avoid the same experience. The only perforation occurring at the time of the operation I am obliged to charge to the use of this instrument. The mucoperichondrium of the opposite side had been separated without perforating it, at least no perforation could be seen from that side and the naris was free from blood. The swivel knife was introduced at the lower part of the cut in the cartilage, and after passing it backward some little distance an inspection of the opposite nostril showed that the knife was slitting the mucous membrane as well as the cartilage. One tine of the fork had pierced the membrane, possibly at a point where the perichondrial layer had been lacerated. An effort was made to cover the slit in the membrane by the opposite membrane, but it was unsuccessful and a permanent perforation resulted. When using the instrument now I am very particular to watch the membranes carefully on each side. I know of one other surgeon who had the same experience as mine. It may be said to the credit of Freer's angular cartilage knives that such an accident would be impossible with them.

For the removal of bone Freer's modification of Grünwald's bone forceps has been used, except in operating at the interior end of the vomer and crista which has been removed by means of Hajek's chisel. I have endeavored in each case to remove all of the deflected bone, except in the extreme upper part of the perpendicular plate, realizing that it would be difficult or impossible to follow a submucous resection with a second operation for the resection of remnants of bone that should have been removed in the first operation. When the turbinates are contracted by adrenalin one is apt to be satisfied with too incomplete a resection of the bony portion. After resection of the cartilage the vomer beneath it can be of little use as support to the external nose, and if deflected there can be no objection to its removal.

I am not able to report an average of so short a time for doing the operation as some others. The majority of my operations have taken forty-five minutes to an hour. Some have taken much less time than this, while a few have required an hour and three-quarters. One might be led to believe that the submucous resection is a simple little operation from the reports of some who have done many operations in ten or fifteen minutes, and report an average time of a little more than that. My experience leads me to infer that either their cases have been simpler than mine, or else they do not attach the same importance to the removal of the osseous part of the deflection. Up to and including the removal of the cartilaginous part of the deflection but a few minutes have been required. The tedious part of the operation is the resection of marked deflections in the posterior part of the vomer and of deflections at the anterior end of the vomer.

In about one-third of the cases the mucous membrane has been secured in place by a silk suture, Killian's hook-shaped needle and an artery forceps being

used for the purpose. Both nostrils have been packed according to Freer's method, narrow strips of surgeon's lint impregnated with subnitrate of bismuth powder, being inserted one at a time, stretched over a blunt-pointed applicator. The removal of the packing is usually begun on the morning following the operation. A few strips of lint are left on the floor of each nostril until 24 to 36 hours after operation, for hemorrhage is most likely to occur near the floor of the nose from the septal artery. In no case has it been necessary to repack the nostrils. There has occasionally been some bleeding on removal of the dressing, but it has been readily checked in each case by an application of cold to the entire face, and back of the neck.

The majority of my patients have been able to resume their occupations on the first or second day after the operation. The mucous membrane is kept smeared with the following ointment until healing takes place, and there is no tendency to crust formation:

℞.	Acidi salicylici	gr. viii	5
	Olei eucalypti	m. v	3
	Camphoræ	gr. iv	25
	Thymolis	gr. ¼	008
	Lanolini	3ii	8
	Petrolati	3vi	24

COMPLICATIONS.

The only complications of any account which occurred in my fifty-six resections were one case of pus infection between the two perichondria, one case of perichondritis, two cases of marked superficial inflammation of the mucous membrane, and four perforations.

The case having pus infection was a woman of forty. A marked C-shaped deflection extending between the middle turbinates had been removed. The wound followed the usual course of healing until the evening of the fifth day, when I noticed some obstruction of the right nostril from swelling of the mucous membrane of the septum. I did not see the patient again for two days when her physician told me that her temperature was 103°, and that she had probably "taken cold." An examination of her nose showed that the mucous membrane of both sides was bulging markedly into the lumen of the nares, especially in the superior part of the septum. I lanced the membrane of the side operated on and evacuated considerable fluid pus. The patient's temperature dropped to normal within a few hours and there was nothing unusual in the farther course of healing. Several months afterward in writing to her physician she said, "The operation on the septum is entirely successful. I am glad I had it done."

In the case diagnosed as perichondritis there was marked swelling of the membranes, especially in the posterior part, and a temperature varying from 99° to 102° lasting for about a week. No pus was discovered, though the swollen mucous membrane was lanced several times. Neither was there superficial inflammation of the mucous membrane with desquamation of epithelium. The swelling and fever gradually subsided and after two or three weeks the passages became perfectly free and the patient expressed himself as well pleased with the result of the operation.

In the two cases of marked superficial inflammation of the mucous membrane, there was swelling of the membrane and some desquamation of epithelium, but there was little or no fever. There was considerable pain in the nose for two or three days. After subsidence of the inflammation there was a marked tendency to crust formation for some little time. In both these cases, however, the mucous membrane resumed its normal function after three or four weeks, and all tendency to crust formation ceased. My explanation of the unusual inflammation in these two cases, is the manner in which the cocain was applied. I had been using an inferior article requiring repeated applications to secure anesthesia. For these two cases I had secured another brand which proved to be a pure article. This I applied as formerly with the above result. The difficulty was not from applying it too strong, but too often, for I have applied the pure powder in every case.

The only case in which perforation of the septum occurred at the time of the operation, was the one previously described, in which the opposite mucoperichondrium was slit by the Ballenger swivel knife. The perforation was near the floor and situated sufficiently far back so that there was no tendency for crusts to form in it after a few weeks. Two of the other perforations appeared during the second week after operation. They each occurred in patients having superficial inflammation of the mucous membrane with resulting crust formation. They were small and situated so far back that they gave no trouble. The fourth and last perforation did not occur until about four months after operation. I had seen the patient about three months after the operation and had asked a rhinologist, who was visiting me, to examine the septum, which he did very carefully, and pronounced it a most satisfactory result. An examination of the nose about a month afterwards revealed a small perforation. My only explanation of the occurrence is that there might have been a defect in the perichondrium at the point of perforation and that the mucous membrane yielded to some sort of force, such as blowing the nose. I believe that I am the first to call attention to post-operative perforations.

I believe that perforations may be avoided altogether by taking particular pains not to wound the perichondrium of the concave side, a precaution which sometimes takes a little time. No perforations have occurred since my seventeenth resection. In none of the four perforations mentioned did crusts continue to form, nor was there any whistling, the only two objections to a perforation of any account.

RESULTS OF THE OPERATION.

Nasal stenosis was relieved in practically every case, and usually the breathing space was approximately the same on the two sides. If there was any difference, the side operated on was more often better on account of previous vicarious hypertrophy of the turbinates on the concave side. The turbinates were operated on in addition to the septum in only five cases, in each of which the middle turbinate on the side of greater concavity was removed. The enlargement of the middle turbinate, being usually of a bony nature, offered an unyielding contact with the septum when the latter was brought into the median line. In no case was the inferior turbinate operated on.

In most cases the symptoms which brought the patient for treatment were markedly improved, if not entirely relieved. Chief among these were headaches about the eyes, temples or frontal region, nasal catarrh, obstruction in the Eustachian tubes, and in a few cases a marked tendency to sneeze.

Alteration of the external contour of the nose has not been observed, except that in a few patients the dilatores nasi were not so tense after removing the nasal obstruction, thus giving the nose a much less flattened ap-

pearance, and the tip of the nose in a few cases was less bent to one side. Sinking in either of the bridge of the nose or its tip has not occurred, but I have taken the precaution to leave a sufficient strip of cartilage at the antero-superior border of the quadrangular cartilage, and have also not sacrificed more of the antero-inferior border of the cartilage than was necessary to correct the deformity.

ADVANTAGES OF THE OPERATION.

1. All obstruction due to septal deformity is relieved in practically 100 per cent. of cases, while by the older methods of straightening the septum "good" results were obtained by the better operators in only about 65 to 70 per cent. of cases.

2. To the feature of thoroughness is added absolute permanency of results.

3. The functional mucosa and submucosa is wholly preserved in nearly all cases. The only function which needs to be considered as liable to be interfered with is that of support to the external nose. Very few operators have mentioned any deformity of the external nose resulting from the operation, and those who have, mention only a slight sinking in of the bridge of the nose due to the removal of too much cartilage beneath it, or to cicatricial contraction of specific origin.

4. The operation may be performed with very little pain under local anesthesia and the risk of general anesthesia thus avoided. It is also unnecessary to subject the patient to the torture of wearing nasal splints for days or weeks after the operation.

5. On account of the results obtained from the submucous resection, doubtless nasal obstruction will now be corrected more often by operation on the septum than formerly, and thus many inferior turbinates, which have an important functional value, will be saved intact, which have been heretofore sacrifices in whole or in part.

In conclusion I append a detailed report of two cases of particular interest illustrative of two different types of deflection encountered, together with the results obtained from operation.

CASE 1.—Mrs. S., aged 40; occupation, housework; nationality, American.

History.—At the age of 9 years the patient was kicked in the face by a horse, which rendered her unconscious for several hours. The nose was badly bruised, but apparently not broken, and was not set. The forehead and cheeks were also badly cut. From the time of the accident and up to 27 years of age the patient states that she was unable to force air through the left nostril. At about the age of 27 she took treatments for several months from a nose and throat specialist, which consisted of local applications, and after this she was able to force a little air through the affected nostril, though that nostril was still of no use for respiration. At 34 years of age she had a severe fall on the face, which fractured the bridge of the nose, necessitating having it set. Following this injury she could breath a little better through the left nostril, but it was still of no practical use for respiration. The patient states that from the time of her first accident at 9 years she has had an almost constant pain over, and back of her left eye, which at times was very distressing. There was also a disagreeable sense of pressure in the forehead and the external nose was extremely sensitive to pressure, so much so that it was painful even to wash her face, and she was unable to wear glasses that had been prescribed for her. The pain was not quite so severe after her accident at 34 years of age. She had sought relief from both oculists and rhinologists, and was willing to undergo any operation which would offer any hope of relief, but had never received any treatment which had permanently relieved the pain.

Examination.—The septum presented a very marked bowed, or C-shaped deflection crowding against the middle turbinate, the side wall of the nose, and the interior turbinate of the left side, and there was a corresponding concavity on the right side. The breathing space on the right side was practically normal, but on the left side the obstruction to breathing was very nearly complete. I have never examined a nose, I believe, so sensitive to external pressure, without signs of local inflammation.

Treatment.—On account of the extreme sensitiveness of the patient, together with the marked character of the deflection, I shrank somewhat from proposing a submucous resection under local anesthesia. To my remark that an operation on the septum might possibly afford her some relief she immediately requested that it be done as soon as possible. A submucous resection was done as usual under cocain anesthesia, a large part of the cartilage, perpendicular plate, and vomer being removed. A part of the bone at the junction between the vomer and perpendicular plate was considerably thickened. The wound healed without complications.

Results.—Very nearly as good breathing was obtained on the affected side as on the other. The relief from pain about the eyes and the extreme sensitiveness of the external part of the nose was complete from the day after the operation, when the packing was removed, and was permanent. Two months after the operation the patient wrote me, "The operation on the septum has completely relieved me of pain about the left eye and the disagreeable feeling of pressure in my head."

CASE 2.—Mr. H., age 22, occupation dishwasher.

History.—The patient had suffered from nasal catarrh with considerable obstruction to breathing for many years. About seven years ago he began to be affected by epilepsy. The attacks at first came about once in two or three weeks. They had increased in frequency until, during the past year, and up to the time I operated on him, they had been coming regularly once a week, and he was unconscious usually about an half hour at each attack.

Examination.—The septum presented on the right side a marked crest-like deflection crowding against the interior turbinate, and higher up on the left side there was also a marked deflection pressing against the left middle turbinate, the deflection being sigmoid vertically. There was considerable obstruction to breathing on both sides.

Treatment.—A submucous resection of the septum was performed under local anesthesia. As the day on which the operation was done was the one on which the patient expected an epileptic attack, I gave him ten grains of potassium bromid before the operation, he not having had any bromid for several months. A large amount of cartilage and bone was resected, which resulted in a practically straight septum.

Results.—A good breathing space was obtained on each side. I was somewhat surprised at the effect of the operation on the epileptic attacks. The patient did not have another attack until four weeks after the operation, which was five weeks after his last seizure. I had the patient keep a record of his attacks up to within a few weeks ago. For several months they came only about once a month and after that they increased to once in about three weeks. Since the operation the period of unconsciousness at an attack was usually not more than ten minutes, whereas, before the operation, it was usually a half hour, and the attacks came regular once a week. The patient did not have bromids after the operation, nor had he had them for several months before the operation. There was practically no change in his general treatment after the operation. I do not advocate the operation as a cure for epilepsy, but simply give the facts in this particular case. Several months after the operation the patient had a severe fall on a cement floor, striking directly on the bridge of his nose. This resulted in a severe hemorrhage, but an examination of his nose several hours after the operation showed that the accident had not altered materially the external contour of the nose. In this particular case I had removed a large part of the cartilage vomer, and perpendicular plate of ethmoid beneath the bridge of the nose, but the results of the fall would seem to indicate that the support of the external nose was not materially weakened by the operation. A very marked improvement in the patient's catarrhal condition resulted from the operation, and he reported several months after the operation that he had not felt so well for years.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

SOME REMARKS BASED ON SEVENTY-FIVE CASES.*

LEE MAIDMENT HURD, M.D.
NEW YORK CITY.

In the series of submucous resection cases which forms the basis of this paper, I find that the number of males predominates over the females three to one. The average age is 27.2 years. The youngest patient was 10 years of age; five patients were under 15 years of age; the oldest patient was 64 years. The deflection occurred one-third oftener to the left than to the right. Only six gave a clear traumatic history, while in one-third of the total there was an indefinite traumatic history. In all these cases the bone as well as the cartilage was involved. Seven patients had previously been operated on with the saw or by the Asch method.

Fig. 1.—The author's submucous elevator.

There were three perforations of the septum, equaling 4 per cent., one due to early inexperience, one to Ballenger's knife and one to a knife slipping off the anterior nasal spine while dividing a very thick periosteum. None of these perforations gave the patient the slightest trouble. Their only knowledge of their presence is from being so informed. One girl of 14 years had exophthalmic goiter which disappeared after the submucous operation. Another woman of 34 years had atrophic rhinitis with crusts on the concave side. She is now entirely well of that condition.

INDICATIONS AND CONTRAINDICATIONS.

The indications might be summed up in a few words by saying that any and all conditions of the septum requiring the removal of tissue should be done submucously. Do not misunderstand me; I do not advise a

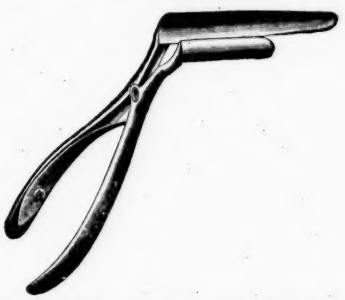

Fig. 2.—The author's submucous nasal speculum.

window resection for a small spur, but I claim that it should be removed without sacrificing any mucous membrane. Deflections should be corrected submucously with but few exceptions, namely, recent traumatic cases where the component parts of the septum can be replaced.

The window resection should entirely replace the former methods of Asch, Gleason, Roe and others. In addition to the recognized pathologic conditions in which this operation is indicated and practiced, I have found where there are (1) a septum that is too thick, a condition which can probably be traced to some previous injury; (2) a thickened cartilage and much fibrous tissue between it and the anterior nasal spine, which may be abnormally high and thick; (3) the neurotic type where the thickening is high up on the septum. These all yield equally well to the submucous method.

The contraindications are few. Do not operate where there is any indication of active syphilis, acute rhinitis, hay fever, diabetes, or advanced tuberculosis. Pus in the nasal cavities due to sinusitis is not a contraindication.

METHOD OF OPERATION.

The method that I have employed is to make a curved incision just in front of the deflection through the convex mucous membrane down to and slightly into the cartilage from the floor upward and forward as far as it can go, generally about one inch. Some operators claim that this incision does not give enough room for vision and attack of the bony deflections. I can only say that I have worked with a plain 32-candlepower electric lamp and can see perfectly and reach any portion of the septum easily with the submucous speculum in place. This incision I place just in front of the deflection. The mucoperichondrium is then elevated a short distance, or until it shows no adhesions, by using the sharp end of the elevator. Then proceed with the reverse or dull end of the elevator, which is made of copper, so that its shape can be adapted to any structural irregularities. It is sometimes impossible to elevate the membrane behind a very acute angular deflection until the cartilage has been removed above it. I now go through the cartilage to reach the membrane of the other side. I accomplish this by using a bone curette, thereby

Fig. 3.—The author's down-cutting forceps for attacking the septal ridge.

avoiding any injury to the opposite membrane. By this means I take out a strip of cartilage about one-eighth of an inch wide and half an inch long, which gives a sufficiently large space in which to start the elevation of the opposite mucous membrane with the sharp end of the elevator. This accomplished, I continue with the blunt end.

Now, having the mucoperichondrium and periosteum free on both sides over the deflection, the cartilage is removed either with my forceps or with a Ballenger knife. Introducing my speculum, which has a long upper blade and a short lower one, so that the long blade is uppermost at all times, I have a perfect view of the operative field, without lateral interference. With the same forceps used for the cartilage, the bony deflection is now broken away, first above the ethmo-vomer articulation,

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session June, 1906.

then below, generally bringing the thickened ridge with it.

I leave the anterior nasal spine until the last whenever it is possible to do so, as I have found that its mucoperichondrium is separated more easily from behind forward than the reverse, and because there is more tendency to hemorrhage at this point than at any other, on account of the two palatine arteries that enter the spine from the foramina of Stenson. Sometimes there is a slight shock when this spine is broken off, on account of the severing of the nasopalatine nerves. The periosteum of the anterior nasal spine covers it entirely and

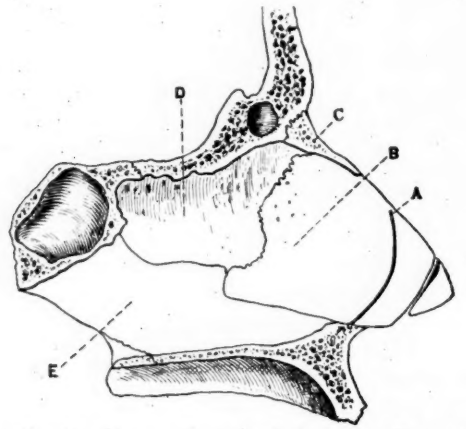

Fig. 4.—Nasal septum. A, curved incision; B, quadrilateral cartilage; C, nasal bone; D, perpendicular plate of ethmoid; E, vomer.

the cartilage sits on it. At times it is so thick and tough that it is necessary first to incise it with a knife in order to separate it from the bone before using the elevator. If the periosteum is very adherent, I use the bone curette as an elevator; as soon as the periosteum is free the deflected bone is easily removed with the down-cutting forceps. This method is painless and there is no danger of injuring the mucous membrane.

I now remove the submucous speculum and coaptate the two septal membranes. If they are in the median line, with no bulging areas, the operation is complete.

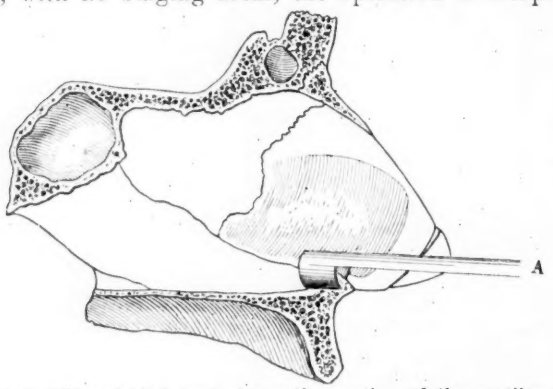

Fig. 5.—The shaded part shows the portion of the cartilage removed, A, the cutting forceps engaged on the anterior nasal spine or incisor crest and the vomer.

Should any deflection of bone or cartilage remain it must be removed, after which the sac formed by the septal membrane and the nasal chambers is irrigated with a mild antiseptic solution. The membranes are then coaptated and the two nasal cavities packed.

I have as yet found no entirely satisfactory form of packing. I formerly used Bernay's sponges, but they do not cover sufficient area and they create a pressure which can not be regulated. Lately I have been using gauze strips packed between two layers of guttapercha tissue. This with a hard rubber splint on one side gives some opportunity for nasal breathing and is fairly satisfactory.

SPECIAL INSTRUMENTS NECESSARY.

I find four special instruments necessary, augmented by a few others that can be found in every rhinologist's armamentarium. The necessary instruments are an elevator, submucous speculum, and two pairs of forceps—one downcutting—which have been previously described.[1] Some form of knife is necessary for the initial incision. I personally like Myles' septum knife, set at right angles to the shaft, and a bone curette to go through the cartilage. These few instruments may be supplemented by more forceps of different sizes and a Ballenger knife. I am not as enthusiastic over the Ballenger knife as formerly, on account of two bad lacerations I have had from its use, accidents over which I seem to have had no control, but I still use it in young patients where I have reason to believe the cartilage is large. A smaller and thinner elevator can at times be used to advantage in traumatic cases.

COMPLICATIONS.

Among the complications following this operation the most annoying is the formation of hematoma. This

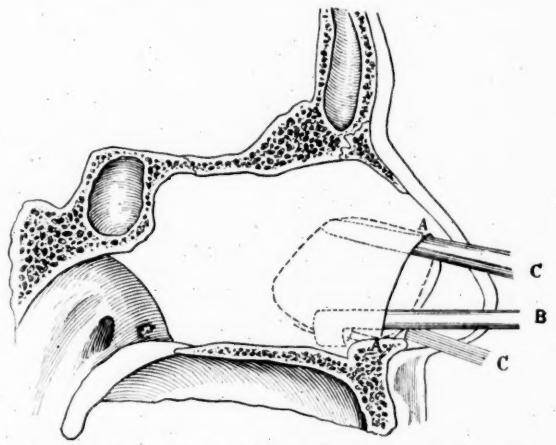

Fig. 6.—A-A shows the incision held open by the long blades of the speculum C-C; the dotted enclosure indicates the amount of cartilage removed; B, down-cutting forceps attacking the lower deflected border.

forms between the septal membranes usually beyond the reach of the packing, or else after the removal of the packing. To prevent the formation of hematoma in cases liable to excessive bleeding, my custom is to place the packing in both sides of the nose, and allow that on the convex side to remain two days instead of 12 hours.

I have seen no septic infection, and there should be none if the operater is clean. I may say here that extreme attention to asepsis, such as covering a patient with sterile towels, disinfecting the nose and face, which I formerly used and recommended for a time, I now find is not necessary, provided all instruments, the surgeon's hands and everything that goes into the nose is sterile. This method has given me good results.

IMMEDIATE RESULTS.

The nasal packing causes considerable discomfort. To some extent I have dimininished this by using a hard rubber splint in the opposite side, which gives the patient some breathing space. I find there is more complaint from the enforced mouth breathing than from

1. Medical Record, Nov. 25, 1905.

the pressure caused by the packing. The first night there is considerable oozing of blood-stained serum which is very annoying and often frightens nervous patients. There is a reactionary swelling seen after the packing is removed, which subsides in from two days to two weeks. For this condition I give an ointment containing 1 per cent. of menthol, which affords some relief.

ULTIMATE RESULTS.

The ultimate result achieved by this operation respecting nasal breathing particularly has been uniformly good. In some we have not only a deviated septum to deal with, but also a bulging of the turbinates which may be either bony or hyperplastic in character. This condition may be simulated by the septal deviation pressing on the turbinates or by a true bulging of the bone as well. In these cases after the septum has been placed in the median line it will free the previously occluded side and partially close the formerly open cavity. If the bulging of the turbinates is due to a hyperplasia of the mucous membrane (which is often the case, due no doubt to a local vasomotor change caused by the deflected septum pressing against the opposite turbinate) the hyperplasia will gradually subside and in the course of a month or two the nose will have an entirely normal appearance. Should the bulging of the turbinate in the formerly open chamber be bony, it is best, in my judgment, first to place the septum in the median line and later to correct the shape of the turbinate by a submucous method, practically remodeling the nasal cavity.

The question now arises, Do the cartilage and bone regenerate? They do not. After a period of from one to two years I have examined most of my old cases and have found the septum flaccid to the slightest touch of the probe. From one patient, aged 14, I removed a section and submitted it to a microscopic examination and found only the two mucoperichondria with a small amount of fibrous tissue between them. As the septal ossification is not complete until the twelfth year I am keeping the few patients I have treated below that age under observation to see if there will be any regeneration. I do not believe in leaving islands of bone or cartilage adherent to one membrane as nucleus for further growth of bone or cartilage, as one operator suggests, for I believe that this would rather act as a foreign body. I have had one patient complain of soreness across the dorsum of the nose and in the columnar nasi on being moved from side to side even four months after operation.

The nasal profile I have never seen affected except in one case, that of a child 10 years old who had one of the worst deflections I have seen. The tip of the nose was strongly bent over to one side and somewhat depressed. After several months there was a slight depression just below the nasal bone, but the physician who referred the case to me was of the opinion that there was no change in the profile.

I go as far forward in the cartilage as is necessary to remove the deflected portion, and have not had any sinking of the nose, but I do not believe that it is a good plan to start the cartilage resection at the free border, if it can be avoided, as in the few cases in which I have done so the result is a weakened nose—at least the tip has not the same resiliency it had before operation, although there is no depression. I think it is better to leave a small strip of cartilage in front, running from the floor upward to the junction of the lateral cartilages. If this strip is badly deflected, replace it in the median line at the time of operation or by a slight subsequent operation.

In regard to the interference with the nerves and blood supply caused by removing the anterior nasal spine or nasopalatine canal, I have attacked both whenever that portion was affected and have had no bad results of a neurasthenic nature; therefore, I am strongly of the opinion that those who have advocated that theory find the anterior nasal spine hard to remove and use this means of excusing their faulty technic.

The mucous membrane of the septum, which before operation was congested and inflamed, generally becomes perfectly normal in color without any after-treatment.

At times the incision leaves a white linear scar, at others no scar is visible. Rarely there is a slight dryness of the membrane near the incision for several months afterward.

Perforations seem to give no trouble. The patients are only aware of their presence on being so informed, and there is no crusting about their edges. Theoretically an operator should have no perforations, but practically he will have a small number. As they cause no disturbance, I think there has been too much stress laid on the subject. Of course, it is pleasant not to have them.

The submucous window resection has now been sufficiently tested both in relation to number of cases reported and their ultimate results to place it on the firm foundation it deserves.

15 East Forty-eighth Street.

SUBPERICHONDRIAL AND SUBPERIOSTEAL OPERATIONS ON THE NASAL SEPTUM.*

ROBERT CUNNINGHAM MYLES, M.D.
NEW YORK CITY.

The history of the subperichondrial and subperiosteal operations on the nasal septum is brilliant. It seems that every writer who has dealt with this subject has added something to the progress leading to the perfection of the technical details, and has also improved or added some new instrument to carry out the intricate and difficult proceedings incidental to the satisfactory performance of these remarkable operations.

In my opinion, your chairman, Dr. Freer, has done more than any one else in this country to popularize and promote the operation. For several years he has persistently demanded its adoption, making many original suggestions in regard to procedure, instruments and technical details which to-day may be said to be almost complete.

AUTHOR'S PREVIOUS TECHNIC.

I commenced to experiment and operate beneath the perichondrium fifteen years ago, and presented a paper[1] on the subject to this Section at Atlanta, May, 1896. I crave your indulgence for an extensive quotation from the same in order that you may appreciate the progress that has been made since that time. Speaking of my method of subperichondrial resection of the offending portion of the cartilage of the septum in cases of vestibular stenosis, I said:

> The operation consists of first carefully cleansing the vestibule (squamous epithelium area) and then making it aseptic

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Surgery of the Nasal Vestibule with Reference to Certain Forms of Stenosis and Facial Disfigurements." THE JOURNAL A. M. A., Sept. 26, 1896.

with solutions of 5 per cent. carbolic acid and 1/1,000 bichlorid of mercury. After this the anterior part of the fossa, posterior to the vestibule, is carefully packed with bichlorid and iodoform cotton. Extreme precaution is used in regard to asepsis in everything. A perpendicular incision is made about 2 or 3 mm. posterior to the margin of the projecting cartilage. The incision is usually made about an inch long and extends down to or near the floor. The perichondrium and the mucous membrane are dissected from both sides of the cartilage, and a piece about 10 to 15 mm. in length and 2 to 4 mm. in width is removed with great care, especially in reference to making a counter opening in the membrane. I never remove the anterior upper part of the cartilage, which is left for the purpose of sustaining the tip of the nose in its proper position. Delicate knives, periosteal elevators, Dr. Noye's eye speculum, a small needle-holder, the smallest size curved needle, and a pair of self-registering rat-tooth forceps are the most essential implements. In certain cases I have found a small knife with short, lateral curve very useful in making the transverse cut

Fig. 1.—Dr. Myles' septal knife.

Fig. 4.—Dr. Myles' septal knife.

for severing the cartilage. The wound is very carefully cleansed, all blood clots and ragged edges are removed, and the parts are brought together with very fine silk sutures. In the majority of these cases the wound unites by first intention and the after-treatment consists of filling the vestibule with aseptic cotton and leaving it in place from two to three days. The results are beneficial from a respiratory sense; the appearance is much improved, and a decided improvement in the quality of the voice usually follows.

Another form of vestibule stenosis, which ought to be placed in the second class, is caused by a deflection, and circumscribed ecchondrotic growth or enlargement on the convex side of the triangular cartilage, and can be relieved by this method of subperichondrial dissection. In Case 3 the atmospheric pressure has caused a depression in the space between the upper and lower lateral cartilages; the stenosis was almost complete when he applied to me about one month since. I dissected out a large growth, which was situated on the septum opposite the depression, and three-quarters of an inch from the margin of the anterior nares. Cocain made the operation

Fig. 2.—Dr. Myles' submucous speculum.

Fig. 3.—Dr. Myles' submucous speculum.

painless. The wound was brought together with four stitches; it united by first intention; in five days the dressing was left off and a small glazed line was all the evidence to indicate the place of operation. The stenosis was relieved and the breathing through the nostril was comfortable.

It is taken for granted that thorough care in aseptic methods should be used in any case that demands this extensive surgery between the deeper layers of the periosteum and perichondrium of the septum nasi. Sepsis, perforation and hematoma are the three points a thoughtful physician keeps most in mind. The irregular deviations and exostotic growths on the convex side have all been sufficiently described many years ago by numerous authors when advocating the different cutting, crushing and sawing operations for straightening the septum and relieving stenosis.

AUTHOR'S PRESENT TECHNIC.

My most favored incision is usually made 2 to 6 mm. posterior to the anterior end of the cartilage, commencing on the septum about 4 to 6 mm. from the edge of the cartilage which forms the bridge of the nose. This is sometimes made perpendicular with a slight oblique slant backward, and on other occasions slightly in the shape of a crescent. I rarely employ the L-shaped incision of Freer, but make an additional incision along the ridge which marks the junction of the cartilage and the vomer, as well as the junction of the ethmoid and vomer, leaving a band of nasal membrane intact extending down to the floor of the nose. When this latter incision is not made, and in cases in which deep dissection from the perpendicular plate of the ethmoid and vomer has been performed I make small counter openings by cutting out a small piece of the nasal membrane and securing drainage through the mucosa near the base of the cavity on the side in which the incision has been made.

The most favorable point for the initial elevation of the perichondrium is beneath the upper part of the alæ nasi at the uppermost end of the incision. Figure 1 represents a knife which I have used for many years and have found far superior to any of the many kinds that are otherwise in use. It is circular-shaped, can be easily sharpened and kept sharp, and it is almost impossible to wound with it the opposite side of the nasal membrane. A little care and time expended on the first elevation of the perichondrium will be well repaid by the ease, safety and rapidity of the operation, for the perichondrium, after leaving the vestibule, is usually easily separated by a dull, wedge-shaped elevator.

Fig. 5.—Dull elevator.

The minute details of the operative procedures have been reported and described so frequently that it would seem superfluous to repeat the greater part of them. But there are certain points, the importance of which I would impress on you. Encouraged chiefly by Freer's reports for several years past, I have removed extensive sections of the quadrangular cartilage, the perpendicular plate of the ethmoid bone, the vomer, and the nasal spine of the superior maxillary bone, and have never caused a perforation, nor made the bridge of the nose sink, nor had a death. All these possibilities are naturally considered by careful, conscientious operators.

Perforations posterior to the anterior third of the septum should cause no serious concern, save that they are usually indicative of a clumsy and indiscreet manipulative technic. I have had one serious case of hematoma which formed and became septic more than a week subsequent to the operation. I also had another case which became purulent two weeks after the operation at a point on the vomer two inches within, where a large exostosis had been removed. Free incisions, curettage, irrigation and tamponage cured the cases after several days of solicitude in the case of the hematoma. I may add that these infections occurred simultaneously with severe attacks of influenza which extended throughout the nose, pharynx, larynx, trachea and bronchi.

My favorite method of procedure which I have employed more or less for several years is inaugurated by washing the vestibular walls of the anterior nose with

water, green soap, alcohol and ether. When possible, I apply a bichlorid dressing over the region of the vibrissæ for a few hours. Sterilization should be as complete as for a brain or abdominal operation. The upright position is preferred with local anesthesia. When patients are extremely nervous or hysterical, I use a reclining chair with an incline of 20 to 45 degrees.

The same methods of using cocain are employed as we have been using for more than 15 years: careful rubbing in over the operative area of small quantities of the crystals, moistened with a 10 per cent. solution; this to be followed by 1 to 1000 solution of adrenalin, and this to be followed in turn by the application of thin layers of cotton moistened in the same manner as the swabs. Care should be exercised that the secretions do not carry the cocain down on the floor of the nose and into the rhinopharynx.

After about 5 to 8 minutes everything should be in readiness for the operation. Two hypodermic syringes with asbestos pistons should be previously prepared, one containing a sterile solution of cocain, .12 of 1 per cent., and the other a solution of adrenalin, 1 to 1000. I use the asbestos pistons, because glass pistons draw the air in when used in an upward position. The .12 of 1 per cent. solution can be used freely and often, and is needed frequently when extensive dissections are required near the floor of the nose and on the vomer.

INSTRUMENTS.

The operation can be done with a few instruments, but I believe it would be best for us to continue experimenting with many new and old instruments in the hope of selecting without personal prejudice a more serviceable kit than we have at present. Some thoughtful worker might produce an instrument that might compare favorably in usefulness with the indispensable and matchless Ballenger knife.

Fig. 6.—Horned chisels.

Two speculums which I have found useful when removing the deeper parts of the cartilage and bone are represented in Figures 2 and 3. They are self-retaining and can be manipulated with the left hand.

I have experimented with many knives, but have returned to those which I suggested many years ago. Two of them are represented in Figures 1 and 4. Two are of the disc pattern and the other is sharp-pointed and protected. Freer's sharp elevators have proven very useful for the initial elevation of the perichondrium and also wherever the perichondrium and periosteum are tightly adherent. The dull elevator, semi-olive shaped, resembling very much the form of a bean set at right angles to the handle, has been found very useful for separating the membranes from the cartilage and bones, except as above stated (Fig. 5). Previous to the advent of the Ballenger knife I employed two little horned chisels for removing the greater parts of the cartilage. I still find them useful for severing small inaccessible pieces of cartilage and sections of the bones (Fig. 6).

My excisor forceps have been found sufficiently strong for removing sections of the cartilage and thin bones, but I would not advise their use for cutting thick and exostotic bones. The anterior lower part of the perpendicular plate of the ethmoid bone is thick, especially where it articulates with the cartilage. A strong edge-to-edge cutting forceps, a Kyle saw, or a trephine may be required to make the proper section. The Hurd forceps for cutting the ridge and the Foster-Ballenger forceps for heavier bones give promise, but, in my opinion, are too large to permit a good view when the part is being severed. The want of delicacy combined with strength, the stumbling block so frequently met with when operating in the recesses of the nose, meets us here with equal force. It is my opinion that many of the perforations made through the membrane on the convex side in the deeper parts add to the general good results by providing counteropenings for the drainage of blood and serum.

Tamponage may act in a way reverse to its intention by preventing drainage and causing the blood to dissect the membranes from the cartilage and bone and produce necrosis, as is the case in traumatic hematoma, which could cause meningeal sepsis through the cribriform plate or sinking in of the nose in the region of the bridge.

TIME AND SPEED.

The question of time and speed should be seriously considered. Some operators contend for an average time of ten, twenty and forty-five minutes. This, in my opinion, is absurd, for they might as well contend for an average speed in operations on the little toe and the thigh bone, as they both belong to the lower limbs. I have done the cartilage operation in five minutes, ten minutes and half an hour, depending on the amount to be removed, the nervousness of the patient and the hemorrhage. Another patient has required an hour and a half. He had been operated on several times previously by different operators; there was an adhesion almost the entire length of the inferior turbinate, an extreme deviation of the cartilage and bones, about two and a half inches in length. The sawing, trephining and burning operations had caused hiati in the cartilage, and firm periosteal adhesions to the bone. I noted that the adhesion held the membrane of the convex side, and was a great aid in keeping it out of the way of the operative field. A thick membrane was dissected from the outer wall, where the adhesion was located, and carried over and placed against the membrane of the opposite side of the septum, and a splendid nasal fossa was secured without any tendency to reformation of the synechia.

VALUE OF THE OPERATION.

The submucous operation has solved the problem in those cases in which the anterior inferior part of the perpendicular plate of the ethmoid bone is deviated to such an extent that it presses firmly on the anterior end of the middle turbinal, the ethmoidal cells and the nasal process of the superior maxilla. This condition is frequently associated with a feeling of pain and pressure in the side of the face and head, which incapacitates the patient in many ways. Occasionally there is an empyema of the frontal ethmoidal and antral sinuses due to pressure on their outlets.

In several cases I have obtained cures, in spite of their being most obstinate and long-standing cases of empyema, by executing a complete submucous operation, removing all of the deviated cartilage and bone which had previously made it impossible to perform the internal operation of removal of the anterior ethmoidal cells, floor of the frontal sinus and median wall of the antrum of Highmore.

In two cases the perpendicular plates of the ethmoid

were removed to within 2 or 3 mm. of the cribriform plate above and nasal bones in front.

In the cases of extreme deviation of the end of the cartilage, where it practically closes the nostril on the side of the concavity, I do not dissect out the projecting end, as described in my former paper,[1] but perform the classical submucous operation on the convex side, leaving a column of cartilage of 4 to 6 mm. in its longest horizontal diameter to support the tip of the nose. If the tip should not recede sufficiently toward the center line, a part of the anterior edge can be dissected, as described in the original article.

I emphasize the importance of one or two counter-openings through the flap of the side of the incision. These openings should be made in all cases where the cavities between the membranes are deep and as near the bottom of the cavities as possible.

DISCUSSION

ON PAPERS OF DRS. BYINGTON, HURD AND MYLES.

DR. J. GIBB WISHART, Toronto, Can., said he did not know why one operation should be expected to do all the work of putting the septum in proper shape, or in the shape required for the use of the person who owns that septum. A perfectly straight septum is very rarely seen. There are cases in which the septum is not perfectly straight, and yet apparently the patient suffers no inconvenience. Each case must be investigated on its own merits and it falls to the surgeon who has the case in charge to adopt from his experience the best method to be selected for the treatment of the particular difficulty he has to deal with. He decried the idea of a blanket operation to do all of this work, and also the idea going forth of the rhinologists who are coming up and being educated, that the submucous resection operation is the operation *par excellence* for the treatment of all cases of deflection of the septum. Another point. He would hesitate to remove any more septum than was absolutely required in his judgment for the purpose of the operation. To preserve the mucous membrane it is quite as important that the cartilage and the bone should be preserved to as great an extent as possible. Conservatism should be the watchword in this respect; the real conservatism that seeks only the best welfare of the patient. As to the question of removing the septum in young children, he knew of no case in which he had attempted to do that, and he could not say that he had yet heard or learned anything that would lead him to remove the septum in a young child. He operates frequently to straighten septums in children, but he objects to their removal. Concerning strong antiseptic solutions in preparing the nasal cavities for operation, he said that antisepsis, or rather asepsis, should certainly be used, but he has a suspicion that these strong antiseptic solutions do damage to the delicate mucous membrane.

DR. JOHN O. ROE, Rochester, N. Y., said that all new operative procedures requiring special skill usually have so many advocates that they soon become very much overdone. Nearly every operator believes it necessary for him to report a long series of operations in order, as Dr. Wishart has said, to show his brilliancy and dexterity in this line of work. This can not be more clearly illustrated than by the numerous operations for resection of the septum that are reported, it being evident that every deviated septum that comes under observation is at once elected for this operation regardless of the conditions present. Resection of the septum is of special service in cases of thickening of the septum with or without deviation, if the nasal passages are small and undeveloped, it being preferable to remove the thickened cartilage rather than the turbinated bodies in order to give free breathing space. He agreed with Dr. Myles that in the large majority of cases in which resection is called for it is necessary only to remove the thickened portion, sufficient to restore the normal patency of the nose. It is not only unnecessary, but unscientific, to remove the framework of the septum because bent out of the median line, when it can be easily and quickly fractured and put in its normal position. It must seem as absurd and uncalled for in such cases, as it would be to remove the entire bone of a bent femur for the purpose of straightening it. The removal of the entire or greater portion of the supporting framework of the septum is to be deprecated, and it will not be very long before a series of flattened noses will require attention. Recently he saw a medical student who had had his triangular cartilage and vomer resected by his professor to correct a deviated septum. There is now not only a very large hole through the septum but, after a lapse of but a few months, the nose is becoming so flat that it looks very much like a syphilitic nose, and the student wishes very much that he had his bent septum back again. He fully agreed with Dr. Wishart in regard to the performance of this operation in children. Resecting a large portion of the septum ought not to be done in children because it interferes with the growth of the septum and its proportionate development to the other parts of the nose, and after a while the child has a flat nose. In the case of spurs, enchondromas, etc., associated with the deflection, resection of the thickened portion is necessary, but to remove the entire framework of the septum because it is simply deviated from its normal position is uncalled for. He resects the thickened portion, fractures the osseo-cartilaginous portion and puts the septum in the center of the passage, then by holding it there 4 or 5 days with a suitable support, until it becomes "set," so to speak, there is a normally straight septum. He has seen cases in which the nose has been completely obstructed by a deviated septum and the operator thought he had made a great success by simply making an opening so that the patient could breathe through it. An operation is not a success unless the septum is put in the center and made normally straight on both sides, with both nostrils equally free and unobstructed. The fracture of the osseous and osseo-cartilaginous portion is made by means of fenestrated comminuting forceps. These forceps are a valuable adjunct to the other operations designed for, or adapted to, the correction of deviations of the cartilaginous portion only. They are a great aid in the submucous resection operation in fracturing the deeper portion of the septum when deviated but not thickened and when resection is unnecessary. In all these operations thorough asepsis is of the utmost importance. In the submucous resection of spurs or thickening from one side of the septum only, there is scarcely any danger of a perforation resulting from a solution of continuity of the mucous membrane so long as the mucous membrane on the other side is undisturbed. There is also little or no danger of sepsis in these cases if the proper antiseptic precautions are carefully observed.

DR. T. R. CHAMBERS, Jersey City, N. J., recalled the time when one of the fathers of rhinology taught how to place a little piece of fine rubber tissue delicately in the nose so as to separate the parts, the septum from the turbinate, etc. After that came Asch with his operation, and after a number of successes it seemed that the question was solved, that everything was going nicely. Then came the Gleason operation and its modifications. It seemed, with its successes, that things were a good deal better than they could ever have been expected to be. Now comes the submucous operation, and it seems for the present as if this has solved the whole question. It provokes admiration to hear of Ballenger and others who do the operation in an average of 10 to 30 minutes. Dr. Chambers operated in his office on a case in which there was an angle posteriorly and one perpendicularly, a case that had been operated previously by the Asch method. He came against that perpendicular plate and was two hours in getting past it. His collar was wilted, his patience gone, but he thought he was doing well to get through in two hours. He believed many others have the same kind of cases and meet with the same trouble. Dr. Freer spoke of an important point, viz., getting around the angle with a blunt hook. Dr. Chambers thinks he can get up there as fast as anybody, but when he gets there he is almost sure, if not very gentle, to find himself through. He can not see it but he knows if he pushes a little further the director will go through. He did not know about the loss of perichondrium. Dr. Byington spoke of the cartilage not returning after two years. Dr. Chambers, whose experience is about two years old, finds in his cases that very often he gets mucous membrane without perichondrium, and has good results. Dr. Byington spoke of having a good chair and headlight. Dr. Chambers does not understand how an operator can sit down with the

patient in front, and use cocain. Perhaps the patient may have an idiosyncrasy against cocain and faint. Dr. Chambers always stands on the patient's right hand, whether operating on the left or right side. Before the Simpson tent modified in the shape of the nostril came out, there was a tent of compressed cotton made circular, and shaped as the case may need. These he uses. He has tried to sew the mucous membrane, but found the stitches pulled out and he gave that up. In regard to this operation there is one cause of congratulation, viz., that it does away with the mutilation of the Asch operation and operations in which forceps were necessary in order to relieve the elasticity of the cartilage. Taking out the cartilage between two layers of mucous membrane is not mutilation, it is simply making the inner tissue fall back to its proper place.

DR. SIDNEY YANKAUER, New York City, said that there are two main bends in a deviated septum; they lie at right angles to each other. One, an oblique bend, going from the vestibule upward and backward, marks the line of union between the cartilage, and the vertical plate of the ethmoid above and the spine and vomer below. The vertical bend passes through the middle of the cartilage above; below, in the bony portion, between the tip of the vomer and the anteronasal spine. The point at which these two cross is an important point in the anatomy of the deviation, the apex. Attention should be directed to the anatomy of the upper surface of the spine and of the vomer. This surface is very rough and the edges are prolonged in the form of irregular projections or serrations. In removing the bony part of the deviation, which is the most important part in every deviation in which bone is involved, the separation of the periosteum is essential for the removal of the bone in order to save the mucous membrane; for if the periosteum is adherent at any point it will tear when the bone is removed. For removing the periosteum he has found the following plan of advantage: After thoroughly scraping the upper surface of the crest, the elevator is introduced behind and brought down from the vertical plate of the ethmoid to the vomer so as to separate the periosteum in the posterior part of the wound. Then the hook-shaped elevator is introduced with the bend of the hook around the edge of the bone; by drawing the hook forward the periosteum is separated from the roughened edges with great facility. In this way he has separated the entire periosteum on both sides without causing its perforation, in most cases. In making the incision he finds it advantageous not to perforate the mucous membrane in the neighborhood of the apex of the deviation if that can be avoided; because that is the point at which the mucous membrane is thinnest and most easily torn, and it is advisable to preserve it on both sides. He makes the incision in front of the deviation, but if the incision is made on the septum alone it will not give sufficient room to get to the deeper parts, unless the mucous membrane is unduly stretched. If the incision is carried outward where the floor of the nose and the vestibule meet, half way across the muco-cutaneous junction, the mucous membrane can be carried over and laid on the outer wall of the nose, without a special speculum. If the patient is told to inspire it will lie against the outer wall of the nose and it is not necessary to touch the flap at all. Removal of the bone has been necessary in the majority of his cases, although he realized the importance of allowing as much cartilage and bone to remain as possible. Under no circumstances would he return to the crushing procedure. The external nose is deviated usually to the opposite side from which the bone is deviated. He has found it possible to straighten the external nose by making two incisions: One is made between the mucous membranes, from this point upward until the instrument can be felt under the skin at the lower edge of the nasal bone. The other incision is made along this line. This frees the bridge of cartilage, and it can be brought over to its proper position in the median line, and held with adhesive plaster. The instruments he used are made by Tiemann & Co. Some are modeled after the instruments of Dr. Freer and Dr. Ballenger. The hook-shaped elevator is a very useful instrument.

DR. GEORGE L. RICHARDS, Fall River, Mass., spoke of questions of technic. More or less has been said about fainting in this operation and having the patient lie down at some period. Dr. Chambers has said he does not see how the operation is done in an upright position. For many years Dr. Richards has used a human head-rest, having gotten the idea partly from the dentists, who always have an assistant standing at the shoulder of the patient. He has a young lady who has been taught to hold the patient's head with almost the rigidity of a head-rest and a good deal more flexibly, and to use the mallet with her left hand and a self-retaining nasal speculum in the right hand. So he has no trouble with the patient as to the light and uses an ordinary argand gas light. If the patient faints it is early in the game, it lasts two or three minutes and rather lessens the amount of bleeding. He does not stop to lay the patient on the floor or any other place. He always tells the patient to bring a friend and in one or two instances he has had the friend support the patient's knees for a few minutes. He always sits at the right hand of the patient, uses an ordinary lamp and an ordinary chair, has no trouble, and much prefers it to any form of chair moving backward and forward.

The operation is satisfactory. A breathing space is obtained without the loss of more tissue than is absolutely necessary. The individual operation is suited to the needs of the particular case. He knows a young physician who was operated on three or four years ago who shows what he regards as the removal of too much cartilaginous tissue, says his nose has fallen in somewhat, and has difficulty in breathing. This does not discredit the operation, but shows the need of care as to this point.

DR. W. E. CASSELBERRY, Chicago, emphasized the distinction between the new submucous resection operation and that which Dr. Richards cited as evidence that "there is nothing new under the sun." The operation, as done to-day, is new. In it is involved a new salient principle, viz., the extended liberation of the mucoperiosteum from both sides of the entire deformed portion of the septum by access from one side, thus making it possible to avoid perforation. Moreover, it involves a new purpose, viz., to dissect out wholly the crooked bone and cartilage, not merely to pare off a fragment at the angle of the crook, which was the sole purpose of the older operations, unless supplemented by forcible straightening measures. For many years he has been accustomed to the Asch, the Watson-Gleason and Roe straightening operations and was able, by one or other of them, to make such satisfactory corrections of deformed septa, that he yielded reluctantly, and chiefly through the advice and painstaking efforts of the chairman, Dr. Freer, in favor of the submucous operation, but within the last couple of years he was converted. He believes submucous resection to be an ideal operation for a large majority of variously deformed nasal septa. He does not sympathize with the name sometimes given it, of "window resection." As a "window," that is, perforation, is to be avoided. "Submucous resection" is the more scientific name for the operation; submucous being understood to mean submuco-perichondrial or periosteal, for this is another of the new principles involved in the operation and one which is essential to its success, inasmuch as the mucosa alone peels hardly at all, while the additional perichondrial layer is essential to stability of the new septum; "resection," meaning to cut out such part of the underlying cartilage and bone of the septum as is included in the deformity, all that and no more. Views differ as to the best method of getting the perichondrium loose from the underlying parts, especially the maxillary ridge and angular excrescences. One says, to dissect from before backward and above downward; another says, dissect from behind forward and below upward (Yankauer); still another says, do not do it at all at the base, but take a forceps and crush it loose (?). That is the point of special difficulty, the detachment of the mucoperiosteum over, under and behind spurs without tearing and within reasonable time. In certain easy cases only can it be done in 15 to 30 minutes; the extended complicated cases require as long as one to two hours. To avoid such an unreasonable duration of the operation when a sharp angular spur lying far back, remains for a final step of the operation, Dr. Casselberry simply saws it off at the posterior part, instead of trying to resect it all, having previously loosened the mucoperichondrium from the concave side so as not to saw through it. He thus sacrifices on one side the mucoperiosteum of a limited area and that far back in the nose, for the sake of taking half an hour from the patient's suffering, for he does suffer, notwithstanding the pain itself is not unbearable. Of course, this expedient violates the ideal of com-

plete submucous resection, hence it is proposed not as a modification but as an occasional expedient only. Another expedient has served well to avoid what seemed an inevitable perforation; viz., having accidentally penetrated the opposite mucosa while incising the cartilage in the Killian line, he has then abandoned this line as a point from which to commence the separation of the mucosa of the concavity and deliberately made a quarter-inch cut through that mucosa, a wide margin back of the accidental penetration and used it as a starting point for separating the mucosa of the concavity from its own side. Suturing the mucosa of the convexity in the Killian line is not difficult and is, under these adverse circumstances, an additional safeguard. He believes in asepsis as opposed to antisepsis. He does not favor putting strong antiseptics into the nose, they are irritating and thus harmful. It suffices to keep unclean things out of the nose.

DR. J. F. BARNHILL, Indianapolis, agreed in the main with most that has been said concerning this procedure as a useful operation. He has watched its progress from the time Dr. Freer, under difficult circumstances, first brought it before the Section at Saratoga. He agreed most positively with those who have said that the entire septum seldom needs removal, and that anyone who does remove the whole septum that is not curved in some part of its extent to the amount of obstruction and positive interference with the function of the nose, does an injustice to his patient. Since these discussions and papers are circulated so broadly over the country, those who read them but who do not know the uncertainties and difficulties that sometimes attend the work and who do not have an opportunity to visit these meetings or the great centers of medical education and see submucous operations performed by such skilled men as the chairman, are apt to be misled by what is said unless both sides, the bad as well as he good, are heard. It has been stated that the crushing operation is and has been a failure and that, therefore, it has no place in nasal surgery. Many eminent men in this country have believed otherwise for a long period, from their experience in performing this class of operations which preceded the submucous operation. At the New York Academy of Medicine, a symposium was held, he thought in 1889, at which were present Bosworth, Asch, Mayer, Beaman Douglass and others. Bosworth read a paper in which he stated that for 10 or 12 years he had not seen a case in which he was not able to remove satisfactorily to himself and his patient, the obstructions with his nasal saw. Asch, he believed, told the Section in 1899, that he had seen no cases in which the Asch operation had not been sufficient to cure these conditions. Now to say, some years later, that this submucous operation is the only operation, would reflect on these operators. Dr. Mayer, perhaps, has done the Asch operation oftener than any other man in America, and Dr. Barnhill requested his opinion as to whether or not he is mistaken as to the records he has made concerning the Mayer-Asch operation. Dr. Barnhill said that, in properly selected cases, he had often felt satisfied with the saw operation. Frequently he had been highly gratified when he had thoroughly, and according to their methods, performed the Mayer-Asch operation; and on many occasions he had been gratified at the rapidity with which he could perform the Gleason operation, as well as the success that attended his efforts. He was unwilling to admit that, under all circumstances, some of these simple operations should be cast aside for an operation requiring an hour and a half for its performance. Nor did he wish to be understood as thinking that the operation in question, so ably advocated by Dr. Freer and others, is not a proper and essential one in a large number of cases.

DR. EMIL MAYER, New York, said that he had hesitated for some time before expressing an opinion on the operation for resection as it is now perfected, for the reason that he felt that such an opinion would, under the circumstances, have some weight, and hence it becomes necessary to consider carefully every possible viewpoint beforehand. When he heard some of the younger men in the profession talking of the results the fathers did not get he felt as if he ought to apologize for some of the statements he had made before various medical bodies and in medical journals as to the results he obtained, or that his friend Dr. Asch obtained, and to admit that he was entirely mistaken. It seemed as if he did not get any such results at all, as if the method formerly advocated was absolutely wrong. This, on due reflection, he thought, would be shown not to be the case. Not for a moment did he decry or overlook the advantage of the operation of submucous resection. He felt that if Dr. Asch were living to-day he would be foremost among those doing this operation, and Dr. Mayer said he himself approved of it. He believed that the Asch operation had great merit and has yet. He is still unwilling to advocate the removal of the cartilage of the nose in a young infant or child under ten. He thinks just as good, if not better results, can be obtained by methods that do less harm to the child. In very young children he frequently relies on the Gleason-Watson method, and is satisfied with the results obtained. He had not heard a single objection by any of the speakers to the use of concentrated cocain in the nose. He emphatically protested against its use. No advantage is to be gained over a solution of reasonable strength. Cocain which will answer every purpose should not be stronger than 20 per cent. He has never used a solution stronger than that and has found patients satisfied and the freedom from danger very great. He could not accept the statement of Dr. Byington, that the presence of adrenalin in the nose prevents the physiologic effects of cocain. He doubted that, but thought that some day serious cocain poisoning will occur. Dr. Mayer rarely operates on a patient sitting up. He does all his operations with the patient lying down and has good results. The patient is not in a strained position, is lying down with the head on a pillow, and Dr. Mayer stands up. Dr. Yankauer has assisted him and would bear him out that the operation is done comfortably to the operator and to the patient. The statement has been made that the operation should not be done on a patient who has tuberculosis. Dr. Mayer does not agree with that. Unless it is an advanced case, and the patient has deviation of the cartilaginous septum the operation should be done. He has seen a number of cases with pronounced tuberculosis in which the operation was done without disadvantage to the patient but with a great deal of added comfort. He would like to hear from the writers of the papers as to their experience of the amount of external deformity that has been bettered by the resection operation. With the Asch operation the external deformity is decidedly relieved. Very frequently patients come with deformities of the nose, and do not care very much that they can not breathe right. They will not be satisfied unless they are assured that the deformity will be bettered.

DR. KASPAR PISCHEL, San Francisco, pointed out the value of a morphin injection half an hour before the operation. It quiets the patient, lessens the quantity of cocain to be administered and obviates the pain which follows after the effect of the cocain has passed off. As a dressing, he recommended the collodion dressing (see THE JOURNAL A. M. A., Oct. 7, 1905).

DR. OTTO T. FREER, Chicago, expressed his surprise that Dr. Hurd should feel justified in stating so positively that the cartilage and bone are never restored when removed in the submucous resection. In this assertion Dr. Hurd has ignored the record of Dr. Freer's observations in an article in the *Annals of Otology*, June, 1905, in which he reported reexaminations of nine adult patients seen from two years to two years and eleven months after the operation, in five of whom the site of the window became firm as the normal septum and firmer than a merely fibrous one could be, and in four of whom, areas only, much smaller than the original window made and occupying approximately its center, were found flaccid. The only thing lacking to prove the reproduction of cartilage and bone in these cases was histologic demonstration, and Dr. Freer could not conceive of any tissue but cartilage that could give such a feeling of firmness as was evident to the probe in the cases referred to and in a number examined since. To assure himself that he was not in error he has shown such cases to others and they have agreed with him that nothing but a reformation of cartilage could have restored the degree of firmness of the septum present in the patients shown them. One case, in a boy, six weeks after the operation, had been examined by Drs. John E. Rhodes, George Shambaugh and George Morgenthau, who were convinced that the cartilage had been reproduced. In children, Dr. Freer has seen restoration of the firmness of the septum over the region of the excised cartilage occur with surprising rapidity, in two weeks even, and he at-

tributed this to the great formative power of the perichondrium at this age. Several times he had even seen a partial rebuilding of the deflection in children, only once enough to impair the result, but in all of these cases sufficient to suggest to the unprejudiced that the cartilage had even been restored in excess. He has also found, that while in children the area over the cartilaginous excision becomes firm speedily, the region of the bony excision stays flaccid for a much longer period or even in part remains permanently so, showing to his mind that the perichondrium is more rapidly productive than the periosteum and proving to him that the new tissue giving firmness to the septum in the area of the excision of the cartilage can not be merely fibrous, for if it were it would seem strange that such a connective tissue partition should be firm where it replaced the cartilage and yield readily when touched with the probe where it took the place of bone. The firmest connective tissue in the body, that of the ligaments, is flexible and possesses none of the stiffness of cartilage and if a fibrous substitute for excised cartilage had this property it would be a type of connective tissue hitherto not found in the body. Dr. Freer attributed the restoration of the firmness of the septum over the area of the resection in the cases mentioned to the perfect preservation of the perichondrium and periosteum possible with his technic and instrumentarium. The large, blunt elevators so commonly used by others, are apt to uplift the mucosa only, leaving the perichondrium and periosteum to be sacrificed with the resected cartilage and bone, of course merely a mucous membrane partition resulting.

Dr. Freer's method permits minute inspection during the entire operation and he thinks it might be called the open operation as opposed to the resection through a buttonhole incision, as advocated by Killian and others, in which the work is largely hidden from sight. He does not claim that in all of his cases firmness of the septum was restored over the site of the operation and he has seen some in which after a year a fair-sized area of flaccidity remained, never equal to that of the original resection, however.

The operation has been declared unfit for children, it being asserted that operating in their minute nostrils is too difficult and that the development of their noses will be interfered with. He agreed that the attempt to do a submucous resection in a child's nostril with the large instruments of Killian or Hajek and with the use of the buttonhole cut appertaining to their methods will result in failure, as he had seen from personal observation. His experience, however, in operating with his open-flap method and his instrumentarium on 33 children between the ages of 7 and 15, and on 12 between the ages of 7 and 11, has been most satisfactory in all but one patient in whom the deflection was, in a measure, reproduced. The nostrils have all remained perfectly patent, there has been no interference with the growth of the nose whatever and instead of hesitancy in accepting an operation on a child's nose, he was always eager to perform it because of the ideal result he felt sure of gaining and the great benefit to the patient's growth and health, certain to result from the free nasal breathing obtained. From his experience, the objection to performing the submucous resection on children on the ground of possible interference with the growth of the nose in childhood is purely theoretical and inspired by the timid imagination of the inexperienced, and he further asserted that the contention that the difficulties of performing the operation in children's noses are excessive is suggested by disappointments resulting from inadequate and faulty operative methods. The question of what amount of cartilage and bone may be removed in the operation has been raised. No more or less cartilage or bone should be taken away than is included in the deflection, its extent being the exact guide of the limits of the resection. Operative methods which excise straight cartilage in front in order to reach such as is deviated behind are faulty. Deformity of the external nose will not result, however, even if the resection be begun at the anterior inferior free border of the septal cartilage and be carried back to the vomer, if this extensive sacrifice of cartilege be needed. Nevertheless, a certain rubbery, limp feeling to the external nose results, for a time at least, after resections extending so far forward and he, therefore, leaves the anterior inferior free border of the quadrangular cartilage intact where he can. He has had to remove this foremost part of the cartilage by reason of its obstructing dislocation into the nasal vestibule of one or the other side in all in 21 out of his 178 cases. A strip of cartilage, at least a centimeter and better more in width, should always be left untouched under the nasal bridge above the level of the wings of the nose, this portion of the septal cartilage being welded into a buttress with the triangular cartilages of the external nose. To get free breathing, however, in anterior deflections the resection has to extend up to this limit in some cases. The resection backward into the vomer and perpendicular plate and downward, excising the crista incisiva as far as needed toward the nasal floor, may be extended to the full limit of the deviation, because these parts do not support the external nose, which depends on its own cartilaginous framework for its shape.

Dr. Freer has never seen deformity and he has performed 178 submucous resections. He has no doubt that in certain imperfect operative methods, especially when the somewhat uncontrollable swivel knife has been used to excise the cartilage, the cartilaginous buttress mentioned has been unduly encroached on and slight sinking-in of the nasal bridge has resulted. This unfortunate result must be very rare, however, for considering the thousands of submucous resections that have already been done to this time, beginning with those of Krieg, in 1886, enough people with sunken noses would be going about by now to quite discredit the operation if deformity were anything but the rarest of sequels.

In conclusion, he referred to the numerous ostensibly new ways of doing the submucous resection which are constantly appearing in the literature and in which authors of small experience, straining to be original, create as far as possible, the operation and instrumentarium anew. They would much better further the cause of the method if they waited until a larger usage enabled them to estimate more justly the procedures of those who have led the way and he thought they would be then less inclined to change the methods of the earlier workers, developed from the lessons taught by mistakes and trials, and would do what would really further this or any method of operation, improve and build on what has gone before and by their approval make standard things that are worth commending while condemning what they find unfit. Attempts to create the whole matter *de novo* simply lead to a repetition of mistakes and retard instead of helping the submucous resection.

DR. R. C. MYLES, New York, said that, in his opinion, it is very important not to remove too much cartilage from a child's nose. He had had children of 5, 10 and 12 years and had removed just enough to get normal breathing, and the results have been most excellent. He had not taken out enough to make it dangerous. Whether these cartilages have redeveloped since this removal, he did not know. It is not sound surgery to remove a straight cartilage from a child's nose. In regard to extreme dissection, a single incision in the anterior end of the nose at the mucocutaneous junction and cartilage and bone dissected to the depth of about two inches, nearly reaching the cribriform region, necessitates the escape of blood and secretions from the wounded tissue at the original point of entry. In this class of cases he made one or two counter openings near the base of the cavity. In extensive operations in which the bone is buried in the outer wall, the necessary manipulative technic for its removal usually causes a perforation of the convex membranous wall. This provides drainage, without which there might be hematoma. He had seen many crooked septums that did no harm. As to external deformity: When he has removed the anterior external part of the cartilage, especially when protruding under the ala, there has been very marked improvement. In those cases in which there was a decided deviation of the external nose, best results were obtained when extensive sections of the convex parts of the cartilage were removed and the anterior superior and inferior margins of the cartilage were left intact.

DR. LEE MAIDMENT HURD, New York, said that to do the operation rapidly does more harm than good and is wrong. He has done it in 15 to 20 minutes. He does not hurry; in one case he took over three hours and got a good recovery. Dr. Hurd uses neither headrest nor assistant. He has seen several cases in which the nose has been tipped over to one side to regain the median line after the operation. He thinks that

everybody concedes that with the submucous method there are 100 per cent. of cures, and that is what is wanted.

DR. J. F. BYINGTON, Battle Creek, Mich., said that the main objection to the operation appears to be that it may be overdone. This is not his only method of dealing with nasal obstruction, but when a septal operation will relieve the obstruction and a submucous resection is chosen, he advocates a thorough operation. Removal of the cartilaginous part of the septum only would have done little to relieve the obstruction in the majority of his cases, for the bony part was usually deflected sufficiently to hold the membranes to one side, to the extent of causing stenosis. The only objection to a thorough operation is that the support of the external nose may be impaired. But it should be remembered that those who have reported sinking in of the bridge of the nose have attributed it to the removal of too much cartilage and not to the removal of too much of the vomer or crista. Regarding the objection to using pure powdered cocain, the drug has been so used in each of his cases and no symptoms of poisoning have been observed. But care has been taken first to blanch the entire mucosa with adrenalin and then apply only sufficient cocain to anesthetize the region of the operation. Any excess has been swabbed away, thereby preventing it dropping into the throat.

TRYPANOSOMES.

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(*Concluded from page 10.*)

GAMBIAN HORSE DISEASE.

This disease was first recognized by Dutton and Todd, in 1902, among the horses of Senegambia. Of 36 examined, 10 were found to have the trypanosome in their blood. As far as known no other domestic animal is subject to the disease, although most mammals, including sheep, goats and cattle, can be infected.

The natural disease is very chronic in character and differs from nagana by the absence of edemas. In the latter respect it agrees with caderas, but, as will be seen, the trypanosomes of these two diseases are easily differentiated. The duration of the disease is not known, though it probably lasts from a few months to more than a year. In an experimental infection of a horse, Laveran and Mesnil noted the formation of an edematous patch, but otherwise the animal did not appear to be ill. There was an occasional rise in temperature and trypanosomes were present at first in the blood, but later were recognized only by inoculation of rats and mice. In this way they were found to be present as late as the one hundred and eighty-third day. The disease is presumably transmitted by biting flies, although no positive evidence on this point has been obtained.

The examination of living and stained preparations shows the presence of two forms; hence the name of the organism, *Tr. dimorphon*. The short form is about 12 microns, while the long one is 20 to 25 microns. A similar occurrence of long and short forms has been noted in galziekte and in bird infections. Unlike as in *Tr. brucei*, the undulating membrane is not conspicuous, but by far the most important characteristic is the absence of a free flagellum. This condition is due to the prolongation of the protoplasm of the cell along the flagellum to the very tip. This feature serves to identify this organism in the same way that the minute blepharoplast characterizes the trypanosome of caderas (Fig. 8*).

The artificial culture of this organism was attempted by Laveran and Mesnil, but, although they succeeded in keeping it alive on artificial media for over a month, they were unable to secure subcultures. Thomas and Breinl were more successful, for they maintained it on blood agar for 78 days and were able to infect animals as late as the twenty-third day.

The structural peculiarity of the trypanosome serves at once to differentiate the infection from all other flagellate diseases. As further evidence of its individuality it may be mentioned that animals immunized to the other trypanosomes remain susceptible to inoculation with *Tr. dimorphon*. Thus goats which have been vaccinated against surra, nagana and caderas are very sensitive to this parasite.

The treatment of the experimental infections has not been as good as with nagana and the other trypanosomiases. Thus arsenic either in the form of arsenite of sodium or atoxyl causes the organisms to disappear temporarily and the duration of the disease has been prolonged, but no cure has been effected. Trypan-red has a similar action on the trypanosome, but neither Laveran and Mesnil nor Thomas and Breinl have noted any definite curative powers. Human serum in large enough dose may also cause the disappearance of the trypanosomes for a varying length of time. The action, however, is more feeble than in the case of nagana.

GALZIEKTE.

A trypanosomiasis of cattle wholly distinct from nagana or surra appears to exist throughout South Africa and probably it occurs elsewhere. Thus a similar if not identical infection has been observed in East Africa (Sander, Panse), in West Africa (Schilling, Ziemann), in India (Lingard), and in the Trans-Caucasus (Ziemann). The disease itself has been known for many years and is known by a variety of names, such as gall-sickness, or galziekte, malaria, jaundice or bilious fever of cattle.

Compared with the other diseases of domestic animals in Africa, this is of but slight importance. The disease is marked by a light fever which lasts several days, and a severe anemia which may be either acute or chronic The mortality as given by Theiler is but 12.5 per cent

In the blood of the infected cattle in 1902 Theiler discovered an unusually large trypanosome which Laveran and Bruce, independently, designated as *Tr. theileri*. It is the largest of the pathogenic trypanosomes and is about the size of the large form of *Tr. avium* as met with in robins and blue-jays. Like the *Tr. avium* and *Tr. dimorphon* it occurs in the blood in two forms, one short and the other long. The former are 25 to 30 microns in length by 2 to 3 microns in width, while the latter may be 60 to 70 microns long and 4 to 5 microns wide. It is very actively motile and has a prominent undulating membrane and a long free flagellum.

Experimentally the disease can be readily transmitted to cattle by injection of the infected blood. The trypanosomes may be very numerous or, on the other hand, scarce. Like the trypanosome of the rat, the *Tr. theileri* appears to be limited to a single host, since all attempts to inoculate other animals have failed. After recovery the cattle are immune. The disease appears to be transmitted by the bite of a fly, *Hippobosca rufipes*.

HUMAN TRYPANOSOMIASIS (SLEEPING SICKNESS).

For a long time it was supposed that man was not subject to trypanosomatic infection. This appears to be true for surra and nagana as well as the other diseases discussed. Certain it is that the bites of the insect carriers are without effect in man, and even accidental in-

* The illustrations appeared in THE JOURNAL, January 5.

oculations have occurred without any observable result. In a way this immunity of man to the animal infections is largely, if not wholly, due to the peculiar action of human serum on these trypanosomes.

The first authentic case of human infection with trypanosomes was observed in Bathurst, Gambia, in 1901 by Forde, who, however, did not recognize the nature of the organisms which he described as "small, worm-like, extremely active bodies." On subsequent examination of the patient, an Englishman in the government service, in December, 1901, by Dutton, the organism was at once recognized as a trypanosome and was named by him *Tr. gambiense*. On his return to England, Dutton examined 115 blood films obtained from native children in Gambia and one of these preparations showed a double infection with malarial parasites and trypanosomes. The result of these discoveries was of far-reaching importance. The Liverpool School of Tropical Medicine at once sent out an expedition, consisting of Dutton and Todd, to Senegambia, with the result that these observers recognized seven cases out of 1,043 persons examined. About the same time (1902) Manson diagnosed the disease in a woman, wife of a Congo missionary. Other cases were soon reported by Broden at Leopoldville, Brumpt at Boumba and by Kermorgant. The existence of a human trypanosomatic fever was thus established, but its relation to the terrible disease known as sleeping sickness was not suspected.

Sleeping sickness itself has been known to exist on the west coast of Africa for more than a century. From the time of Winterbottom, who described it among the slaves of Benin in 1803, it has repeatedly been studied by English and French physicians and missionaries on the Gold Coast and at Sierra Leone. Although undoubtedly hundreds of slaves infected with the disease were transported to the West Indies, there is no reason to believe that new cases ever developed on this side of the Atlantic. The disease is stated to exist on the west coast of Africa from Senegal on the north to Benguella in Angola on the south. In certain localities of this vast territory it has proved particularly destructive, notably along the Lower Congo. Since the establishment of the Congo Free State, in 1885, the disease has been carried to the Upper Congo in the first place by traders and, secondly, by military expeditions (1892 to 1896) against the Arab raiders. In 1900 its presence was reported for the first time in Uganda, where already it had caused an enormous destruction of life. This serious outbreak is generally supposed to be due to the return of the remnants of Emin Pasha's army which were brought from the regions west of Albert Nyanza during the years 1892 to 1895 and established on Victoria Nyanza in Busoga. Whatever its origin, since its introduction the disease has spread along the entire north shore of Lake Victoria Nyanza and has even passed down the Victoria Nile as far as Wadelai (Greig).

The British and Portuguese governments recognizing the need of definite information regarding the cause and spread of sleeping sickness appointed commissions to investigate the disease. Considerable attention was given at first to the supposed bacterial cause, and while engaged in this study in Uganda, Castellani noted the presence of trypanosomes (November, 1902) in the cerebrospinal fluid of five cases of sleeping sickness. At the time he did not consider that this trypanosome had any causal relationship to the disease, but later, on the suggestion and with the aid of Colonel Bruce and others, he examined additional cases of the disease and was able to report the presence of trypanosomes in 70 per cent. of the cases (April 1903). Subsequent studies by Bruce, Nabarro, Greig and others have demonstrated the constant occurrence of the *Tr. ugandense* (Castellani) in either the blood or cerebrospinal fluid of sleeping sickness cases.

The trypanosome found in sleeping sickness was at first supposed to be distinct from the *Tr. gambiense* of Dutton, but subsequent researches have shown that in all probability the two organisms are identical and that the trypanosomatic fever is but the first, while sleeping sickness is the last stage of the human disease.

Still more recently the important fact has been brought out that glandular enlargements are a constant feature of early cases of human trypanosomiasis; in other words, that sleeping sickness during the early stage is a specific polyadenitis caused by the *Tr. gambiense* (Greig and Gray). It has been shown that the trypanosome could practically always be found in such enlarged glands, and Dutton and Todd have pointed out that cervical gland palpation is a simple and very accurate method of detecting cases of trypanosomiasis in which clinical signs are wanting. The recognition of the existence of such cases explains the ease with which the disease has been carried into uninfected districts by the migration of apparently healthy persons. And, furthermore, being a simple means of diagnosis of the earliest stage of the infection, it enables putting into effect measures for the prevention of the disease. This means the exclusion and removal of persons having glandular enlargements from uninfected territory and their segregation as far as possible. The necessity of adopting every possible means of arresting the progress of the disease is seen in the fact that in many villages Dutton and Todd found from 30 to 50 per cent. of the population infected, which means, since the disease so far as known is invariably fatal, that at least a third of the people in such districts will probably die of trypanosomiasis. That this is far from exaggerating the conditions of things is evidenced by the history of the spread of the disease in Uganda, where in a few years hundreds of thousands have died of the infection and whole regions have been depopulated.

It has been shown conclusively that sleeping sickness is conveyed by the bite of a tsetse-fly, *Glossina palpalis*. This species is different from that which carries the nagana of South Africa. Whether other species of this genus can convey the disease has not been established. In all probability as in nagana the fly is a mere vector, a mere mechanical means of carrying the trypanosome from the sick to the healthy persons. The presence of multiplication forms of trypanosomes in the stomachs of such flies (Gray and Tulloch, Koch) has been taken to show that the fly is not a passive carrier of the organisms. The tsetse trypanosome, however, has not been shown to be identical with the human parasite; in fact, there is reason to believe that they are in no wise related, and that the former (*Tr. grayi*, Novy) is a harmless parasite peculiar to the fly.

Human trypanosomiasis is characterized by two stages. In the first the trypanosomes exist in the blood, but always in small numbers. An irregular remitting fever is the chief symptom of this stage. The pulse and respiration are accelerated. Slight edemas and erythemas are at times met with, and in addition enlarged glands and spleen. Owing to the mildness of these symptoms, the disease passes unnoticed among the natives. The second stage follows after the lapse of a variable length of time. It is this stage which is known as sleeping sickness. The

fever is marked especially toward evening. The patients become dull and apathetic and complain of intense headache. Weakness of the arms and legs develops, speech becomes difficult and emaciation sets in. Somnolence increases and eventually a comatose condition supervenes with death.

The *Tr. gambiense* is present in but small numbers in the blood of man. Most of the experimental animals are subject to infection, and in the blood of such it may become very numerous. The course of the disease in monkeys is at times very suggestive of that in man. The baboon has been supposed to be refractory, but Thomas and Breinl have succeeded in infecting four of these animals. The strain inoculated from one of these proved to be highly virulent. The macaques are susceptible and die in from one to two months. In the horse and donkey the infection is very chronic, with very few parasites in the blood, and recovery seems to occur. The cow is even more refractory than the horse. Sheep contract also a mild infection and recover. Goats are apparently more susceptible, and death may result (Thomas and Breinl). Dogs are easily susceptible, but may survive for 6 or even 9 months, though death may occur in from 5 to 6 weeks. Cats are likewise subject to infection, and especially kittens, in which the parasites appear in large numbers and cause death in from 3 to 7 weeks. In rabbits and guinea-pigs the trypanosomes are very scanty, especially in rabbits, and the infection is very chronic, lasting for several months. In mice the infection is also very slight and recovery may take place. On the other hand, white rats are easily infected. As a result of intraperitoneal injection, we have seen the parasites appear in the blood within three days, though the period of incubation is usually given as about 15 days. The parasites may increase enormously in numbers for a while and then almost completely disappear from the circulation. Death occurs in from one to three months.

Morphologically the *Tr. gambiense* resembles very closely *Tr. brucei* and *Tr. evansi* (Figs. 9 and 10). The cultivation of the organism has been attempted by Laveran and Mesnil and also by Thomas and Breinl. The former were able to keep it alive on blood-agar for 19 days, but were unable to obtain subcultures or to infect rats with such material. The latter succeeded in maintaining it for 68 days, but they also failed to obtain actual subcultures.

Normal human serum, which possesses a pronounced action on the trypanosomes of caderas and nagana, is without effect on *Tr. gambiense*. According to Thiroux, the serum of cases of sleeping sickness, in which the blood is free from trypanosomes, possesses a slight protective action with respect to mice.

The treatment of experimental animals with arsenic (atoxyl), trypan-red and other anilin dyes (Mesnil and Nicolle) have given very encouraging results. With the aid of an alternate treatment with arsenic and trypan-red Laveran was able to cure monkeys. With the exception of one case in a woman, reported by Dutton and Todd, the treatment of the human cases has thus far been ineffectual.

KALA-AZAR.

A brief consideration must be given at this place to a peculiar organism which is present in kala-azar and the cachexial fever of India, especially since recent studies go to show that it is a flagellate and closely related to the trypanosomes. In 1903 Leishman found certain bodies in the spleen of a patient, who had the disease, and surmised that they were degenerated forms of trypanosomes. Very shortly after Donovan, at Madras, confirmed this finding, but he was unable to get any trace of trypanosomes. Laveran, to whom specimens were submitted, pronounced the parasite to be a piroplasma and gave to it the name *Piroplasma donovani*. Ross regarded it as representing a new genus, and for that reason he called it *Leishmani donovani*.

In his investigations, which have since been confirmed by others, Rogers found that when the fresh blood obtained by spleen puncture was transferred to test tubes containing a few drops of 2 to 5 per cent. citrate of soda in normal salt solution the parasites remained alive for many days, and after about three days some of them developed into elongated flagellated bodies which he took to be trypanosomes, although no undulating membrane could be detected. Rogers has since found that the flagellation took place more uniformly and regularly if the citrated spleen blood was faintly acidified with citric acid. The flagellated forms develop best at about 22 degrees C., the same as in the case of the cultural trypanosomes. The Leishman-Donovan bodies, it may be said, resemble greatly rounded up forms of trypanosomes. They show a nucleus and a micro-nucleus. In the citrated blood these forms increase in size, elongate, and give off a flagellum. The latter start from the blepharoplast which lies close to the anterior end of the cell. It is perhaps on account of this close proximity to the end that, as in the case of the mosquito trypanosomes, no undulating membrane can be made out. At all events, on account of the absence of this structure, Rogers has recently come to the conclusion that the organism belongs to the herpetomonas group and not to the trypanosomes, and he has designated it as the herpetomonas of kala-azar.

The fact that we have in this case an undoubted flagellate developing from the Leishman-Donovan bodies goes to establish a certain relationship between this disease and those which have been heretofore considered. The exact position of the organism can only be determined by further study. It certainly presents some of the cultural characteristics of the bird trypanosomes and more especially of the mosquito flagellates. It may be added that, while ordinarily the mosquito herpetomonas fails to show an undulating membrane, in some cultures evidence of such can be observed, and hence the apparent absence of the structure does not necessarily exclude the organism from the group of trypanosomes.

As to the transmission of this fatal disease, nothing definite can be stated. Rogers is of the belief that the common bed-bug or possibly mosquitoes are the most likely hosts. By allowing mosquitoes to bite a patient Patton has been able to find in their stomachs flagellates, *Herpetomonas* and *Crithidia*, such as have been described in these insects, and consequently such forms can not be considered as stages of this parasite. Patton, in a personal communication, however, states that he has been able recently to observe divisional and even flagellated forms in bugs, which important fact goes to show that this insect is the transmitting agent.

TRYPANOSOMES OF OTHER ANIMALS.

In the foregoing an effort was made to give a brief resumé of the mammalian trypanosomes, particularly of the pathogenic species. These organisms, however, are by no means limited to the mammals, but, on the contrary, may be found in almost all forms of life down to the insects.

Some of the earliest observations made on trypano-

somes were on those of the frog. At present a number of species are known to occur in these animals. They are nearly all characterized by their great bulky size, although long and slender as well as short forms are known. Williams first obtained a successful initial culture of the *Tr. rotatorium*, and since then the cultures have been more fully studied by Bonet. Not only frogs, but also turtles and snakes, have been shown to harbor trypanosomes in their blood.

Of particular interest, perhaps, are the flagellates present in the blood of fish either from fresh or from salt water. Of these, two genera have been recognized: *Trypanosoma* and *Trypanoplasma*. The latter genus was created by Laveran and Mesnil and includes forms which differ from the true trypanosomes in having a posterior as well as an anterior free whip.

The trypanoplasmata have been studied particularly by Laveran and Mesnil, Brumpt, and by Keysselitz. The latter has observed a double infection with the two genera in 14 species of fish. Although a considerable number of species of fish trypanosomes and trypanoplasmas have been described, Keysselitz regards the latter, in the fish studied by him, as representing but one species, *Tr. borreli*. The percentage of naturally infected fish can not be readily given, but there is reason to believe that it is very large. As in the case of birds, the flagellates may be present in but very small numbers and hence escape detection.

The infection is undoubtedly spread among fish through the agency of blood-sucking parasites and more especially the leeches. The studies of Brumpt and of Keysselitz have shown that a large percentage of the leeches contain variable numbers of flagellates in their intestinal canal. Owing to the many difficulties attending such investigations, it has not been possible as yet to prove definitely that the flagellates observed in the leech are derived from those in the blood of fish or that, conversely, the fish flagellates develop from those multiplying in the gut of the leech. Nevertheless it has been assumed, and it is quite generally accepted, that the leeches are the immediate hosts of the parasites. Keysselitz, and especially Brumpt, have succeeded in infecting fish by placing on them infected leeches. In a similar manner by means of infected leeches Brumpt has succeeded in infecting frogs and eels.

Insect Trypanosomes.—It is an interesting fact that flagellates are present in the gut of many insects, irrespective as to whether these feed on blood or otherwise. The herpetomonas of the housefly is an example of infection of a non-biting insect. Many similar observations could be given to show that intestinal parasitism by flagellates is a common occurrence. I have shown that 15 per cent. of the wild mosquitoes are infected with herpetomonas and crithidia, while Ross, Legér and others have shown similar parasites in the larval and pupal stages. These two organisms when grown on blood agar retain the same form as observed in the insect, thus demonstrating that they are cultures *in vivo* and as such that they are probably multiplication forms of trypanosomes and not distinct genera. Thus it follows that much caution must be used in drawing conclusions as to the relation of flagellates found in insects to the blood trypanosomes or to the intracellular parasites found in vertebrates. As has been pointed out, the trypanosomes of tsetse flies are not to be regarded as multiplication forms of *Tr. brucei* and *Tr. gambiense*, and the same conclusion holds for Schaudinn's views regarding *Tr. noctuæ* and *Spirochæta ziemanni*, which two forms he considered as flagellate stages of the halteridium and leucocytozoon of the owl.

The foregoing summary of the trypanosomatic infections would be incomplete without a brief reference to the flagellates of birds. These were first studied by Danilewsky, who described a large and a small form of *Tr. avium* (1885). Since then these forms have been found by a number of other investigators, and for the details of this work the reader is referred to the monograph on "Bird Trypanosomes" by Novy and MacNeal.

It has been shown by us that flagellate infection of birds is exceedingly widespread and that it can be recognized best by the cultivation method. A number of species have been shown to exist in our common birds. These can be readily cultivated and the characteristics presented by the cultures permit the differentiation of species. Since then Thiroux has been able to grow the *Tr. paddæ* and Cerqueira has been equally successful with the trypanosome of the *Nicticorax of Brazil*. The most important result of these studies on bird trypanosomes has been the demonstration that these flagellates are in no wise related to the intracellular parasites.

TREATMENT OF FRACTURES OF THE NECK AND SHAFT OF THE FEMUR.*

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I. FRACTURE OF THE NECK OF THE FEMUR IN ADULTS.

The treatment of the fracture of the neck of the femur in the old familiar way by weight and pulley, extension and a long T-splint, was always disappointing and the result was a more or less crippled condition of the patient, which remained for life. To be sure the trochanter would be pushed upward and make for itself a sort of socket in the soft tissues, which would tolerate some weight-bearing, but a crutch or cane was a necessity in the majority of cases. This was not the fault of the medical attendant, but rather of the method of treatment. A patient put up in this manner is far from being immobilized as regards the fracture.

Every time the bed-pan is inserted, which is several times daily, the fragments are moved. If the body is turned at all for the necessary care of the skin on the back, more motion is obtained, so that if proper care is given to the skin and the patient waited on, as must be done, the fragments are in more or less of a state of constant motion. Could anything be more impossible than a bony union under such conditions? Yet this has been considered the proper treatment for years and cases are even so treated to-day.

Under such a method of treatment, it is small wonder that patients did not do well. In the aged it came to be considered that they did not stand confinement in bed very well, yet all the while the trouble was not that they were confined in bed, but that they were not properly cared for while in bed. Still another bugbear, especially in the aged, was the bed sores which came early and which were often very large in area. This was very weakening and was often the immediate cause of exhausting the strength and so hastening death. The most troublesome place for bed sores was in the sacral region, and this because it was usually soaked in urine. Turn-

* Read before the Rhode Island State Medical Society at the annual meeting, May 31, 1906.

ing the body caused so much pain that the patient would let the urine escape without notifying the attendant, thus resulting in more or less maceration. These bed sores were usually attributed to the less resistant tissues of old age rather than to the true cause, i. e., faulty treatment.

Now all this is changed. The fracture of the neck of the femur can be fairly immobilized. Bed sores are no longer necessary, and under such conditions it has been found that the aged stand confinement exceedingly well and that solid union is a possibility, and in some cases without any shortening whatever.

As far as I know, Dr. John Ridlon,[1] of Chicago, was the first to write about treating this particular fracture by means of a modified Thomas splint, and for a while it was not mentioned in any text-book, but the later edition of Dr. Scudder's[1] book gives all the details for making it. Any surgeon, however, who treats many cases varies the details of fitting and applying.

First, as regards making the splint. The curve of the stem of the splint fits the curves of the body as accurately as possible, in order that there may not be any points of pressure. In order to do this, the hospital bed, which is a necessity, must be rendered level and unyielding by placing crossbars underneath the mattress. These may be of wood or metal, as preferred. The patient is then laid on this level bed when the curves of the body may be traced by placing a flexible metal band underneath the well side and having it extend from a point at about the level of the axilla down to the lower end of the swell of the calf of the leg. This point is, perhaps, about the junction of the middle and lower third, possibly a little lower. With a little practice this gives the curve for the stem of the splint very accurately. For the body I have gotten in the habit of making three bands instead of two where the patient's body is of sufficient length. One is at the upper end of the splint encircling the body at the axillary line; another is at the waist line, and the third is between the two. These bands are passed beneath the stem so that in lifting the patient they will not pull off, as they are liable to do if riveted on the upper surface. The smaller bands encircling the leg are riveted to the upper surface, as there is no strain on these fastenings. All of these encircling bands are adjusted by buckles and straps which are so arranged that the straps pull toward the operator when standing at the side of the injured leg. For full description of the splint see Ridlon or Scudder.[1] Extension is made by strips of adhesive plaster on the sides of the leg in the ordinary way, by webbing at the end passing through a set of buckles attached to the lowest band on the end of the stem of the splint, while on a second set of buckles attached to the same band is attached the cord which passes over the pulley at the foot of the bed and at least a fifteen-pound weight suspended. Another way is to allow the extension directly from the leg.

In my own cases every patient goes into the splint without any shortening, because in every case ether is given, the fragments gotten into the best apposition possible, the leg pulled down to length and, if anything, a little longer than its mate. When this is an accomplished fact by measurement, then the various bands are strapped around the body, fifteen or twenty pounds of weight attached to the pulley cord and the foot of the bed elevated. The splint is applied about the end of the first week and it has been as late as the end of the second week. During the interim a moderate weight is applied in order to keep the muscles from getting very much contracted so that getting the leg down to length may be easy when ether is finally given. After the splint is applied, then care and attention and eternal vigilance is the price of success. The whole weight of the body comes directly on the stem of the splint; hence great care is necessary to have the curves of the stem fit the curves of the body, and especially must the curve around the buttocks be considered. The more splints one makes the greater skill is acquired in fitting. The bands are flexible, so that if pressure points are found they can be remedied by bending the bands cut at these points. The bands are made a little shorter than the exact circumference of the body to allow for the shrinking of fat tissue. Even when allowance is made for a fleshy person, there may be so much shrinkage that the bands overlap; then the ends may be sawed off with a hack saw and thus this difficulty is obviated. If a pressure point occurs at the buttock, the fat tissue and skin is so loose here that the irritated place may be pushed off to one side and the splint allowed to touch in an entirely different place while the irritation subsides. If the pressure point is higher up on the body, then folded towels may be introduced above and below the band, thus lifting the irritated area away from the splint. Another method of removing all pressure from the skin, from the buttock up, is to lift the patient bodily and insert a pillow lengthwise beneath the body, then restrap the band around pillow and patient together. In this splint, as so carefully explained by Dr. Ridlon, the patient can, and must,

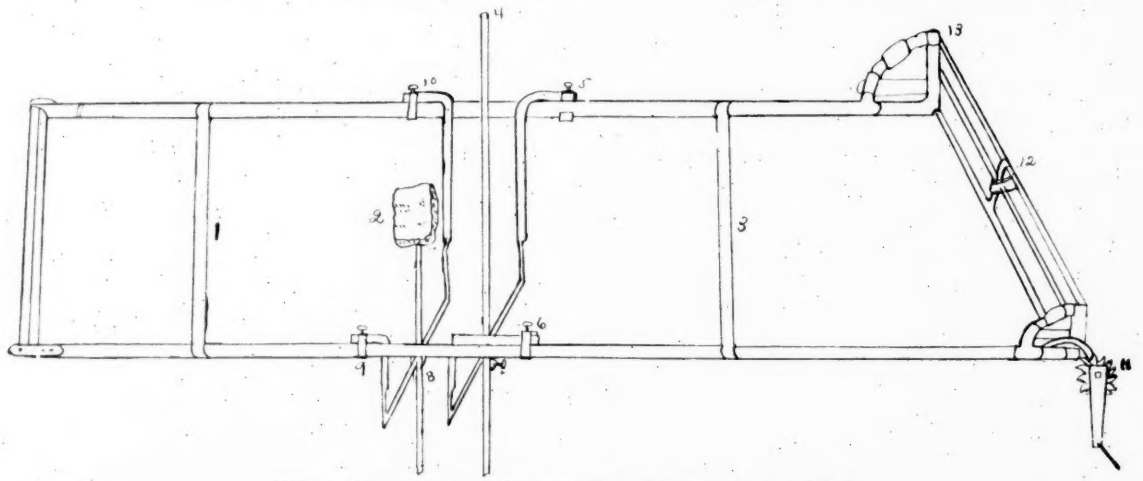

Fig. 1.—Reproduction of frame, with all the parts in position.

1. Scudder: The Treatment of Fractures, 5th edition, p. 309.

be turned over every day, and in some cases several times daily, for bathing and powdering the skin, thus preventing the formation of bed sores.

When thoroughly put up in this splint, all of these things may be done, including insertion of bed-pan, without moving the fragments very materially, and consequently, if kept immobilized for a sufficient length of time, and if also the leg can be kept down to length, it is fair to expect union with no shortening in an increasing number of cases. In order to keep the leg from rotating and absolutely down to length, it is my custom to measure the length of the leg frequently, by passing the tape underneath the straps, and with this actual verification to keep the leg at its proper length from

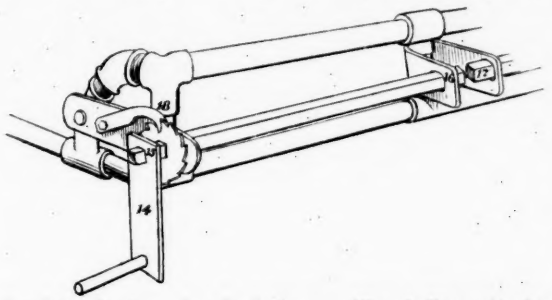

Fig. 2.—Reproduction of end of frame, with windlass attachment.

start to finish. Another point of the utmost importance is to arrange a smooth pad just back of the heel and just beyond the end of the splint. That is, the lower end of the leg between the end of the splint and the heel must be properly supported. This prevents the end of the splint from digging into the flesh and also prevents pressure sores on the heel. After the splint is buckled up its whole length the leg is then bandaged to the splint, leaving the buckles and straps exposed for daily adjustment. In this way the treatment is continued for from six to eight weeks from the time of fracture. When the splint is omitted it is my custom, if possible, to continue the weight and extension for another week and also to protect the leg by sandbags or some arrangement to prevent extreme rotation of the leg. Then the extension is completely removed, but the patient should still be kept in bed for two or three weeks longer to become accustomed to using the leg somewhat, as turning over in bed and assisting in body movements in general.

About the end of three months it is allowable to get up and about with crutches, at first bearing no weight at all, but gradually using the leg more and more until by the end of another four weeks full weight is borne and by the aid of a crutch or cane walking is very satisfactory. Probably by the end of the sixth month from the date of fracture walking is possible without any artificial assistance, and the result to be hoped for at this time is bony union and good functional use of the leg. This at present is the ideal or perfect result, and is not obtained every time, by any means, but with more care as to details and by constant daily attention this result should be much more frequent in the future and in consequence there should be fewer cripples seeking for help.

A number of cases, especially in the aged, have been treated in this manner, and there are four of these in apparently perfect condition, i. e., they are walking without artificial assistance, they are not lame, the leg is practically the same length as its mate, and there is no pain or discomfort, and the presence or absence of bony union can only be demonstrated by *x*-ray pictures, and I hope in the future to present even these proofs. Bad results are obtained by any method of treatment, and I have had one case of non-union. There was apparently no callus at all. When it was impossible to have personal care of the case, it became necessary to have some method by which care and attention to mechanism was reduced to a minimum. The only other way seemed to be plaster of Paris. In order to apply plaster of Paris properly, it became necessary to hold the patient in some way that fracture could be reduced and held reduced while the plaster was applied and set, the plaster extending from the axilla down to and including the leg and foot of the affected side. To accomplish this a frame was constructed as follows:

The frame is an ordinary gas-pipe frame which may be laid across two tables or stands in any house. The patient is placed on the frame with the sacrum resting on the support No. 2 (Fig. 1), which is a metallic disc covered with felting and is made so that it is detachable from the upright which is clamped at No. 8 (Fig. 1). This upright can be elevated or depressed and also moved laterally. The shoulders rest on the crossbar No. 1 (Fig. 1) and the head may rest on a pillow on the table which supports the end of the frame. The calves of the legs rest on the crossbar No. 3 (Fig. 1).

Extension is applied to each leg by means of adhesive plaster, and the ends of the extension straps are wound around the windlass attachments at Nos. 11, 12 and 13 (Fig. 1). These two attachments are entirely separate, as shown by Nos. 15, 16 and 17 (Fig. 2), so that traction may be made separately on each leg. The bar No. 4 (Fig. 1) which is clamped at No. 7 (Fig. 1) is thickly padded with felting and goes directly against the perineum so as to give a point of counterpressure as both legs are pulled on. Nos. 14, 15 and 18 (Fig. 2) show how traction is made on each leg and held so that it will

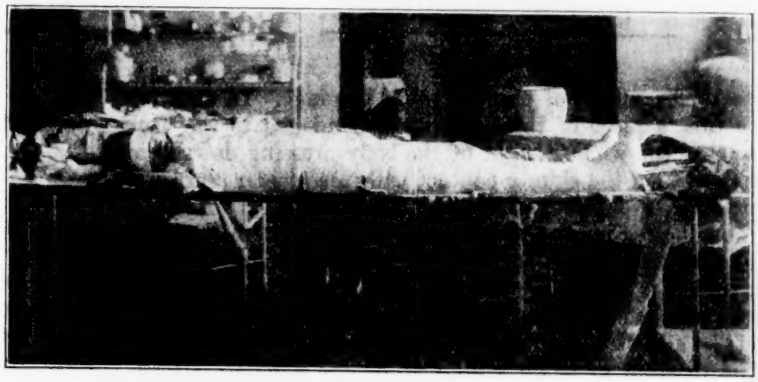

Fig. 3.—Reproduction of photograph of patient on frame, with plaster applied.

not let go. When all is ready, with the patient etherized and in position, both legs are pulled downward until the leg shortened from the fracture is just as long as its mate and at the same time the anterior superior spines are kept in their correct relations. Then by keeping the clutches locked, No. 15 (Fig. 2) the patient and fracture and legs and body are all held perfectly in position while plaster of Paris is applied from the axilla down, including the leg and foot of the affected side, as seen in the photograph (Fig. 3). To remove the patient, pass two or three strips of a four-inch unbleached cotton roller bandage around the sides of the frame and under

the buttocks of the patient very tightly so that when the sacral support and the perineal bar is removed the frame can be lifted with the patient on it and placed on an ordinary hospital truck or, if in a house, on the bed. Then the crossbars, Nos. 1 and 3 (Fig. 1) are removed; also the bandage is cut away, when the whole frame is lifted away, leaving the patient in bed. There is nothing new in the mechanical principles here involved, but they have simply been blended together, thus making a portable frame which can be easily conveyed from house to house.

The patient, etherized, is placed on the frame and extension made on both legs by the windlass attachment until the fracture is reduced and proved so by actual measurement. Then, while held in this position, plaster is applied from axilla down to and including the leg and foot of the affected side and so held until the plaster is set. At this stage a four-inch cotton roller bandage is passed back and forth under the buttocks, over the sides of the frame and securely tied. Then the sacral support and perineal bar are removed and the patient may be lifted by means of the frame on to the hospital bed which has been prepared.

In preparing the patient for the plaster, just a few words. The body, from the axilla down, also the leg and foot, are wrapped in sheet cotton and then held securely by means of a gauze roller bandage. In addition to this, a piece of thick felting is bandaged to the back so that the whole weight of the body pressing downward will not get the skin in contact with the plaster and so, if possible, avoid pressure sores. In order to get extension the adhesive plaster strips which are applied to the sides of the leg have to be made in a special manner. The webbing is placed between two layers of adhesive plaster and stitched in. The webbing extends the whole length of the adhesive plaster and a sufficient distance below the end to allow of being wound up on the windlass attachment at the end of the frame. The foot is bandaged to a point just above the malleoli, then the extension straps are placed on the side of the leg and covered its whole length by a cotton roller bandage. After the plaster is applied, which includes the foot, spaces are cut where the webbing emerges from the plaster so that the extension is made directly from the leg and not from the plaster of Paris. This is very important. It is also very important to make extension on the well leg when the patient is fixed up in bed, because, if it is not done, the pelvis will tilt and the short fragment will be pulled downward and thus overlap just as without extension the bony fragments will be pulled upward. Either way it is done, shortening is the result. This is explained by Figures 4, 5 and 6.

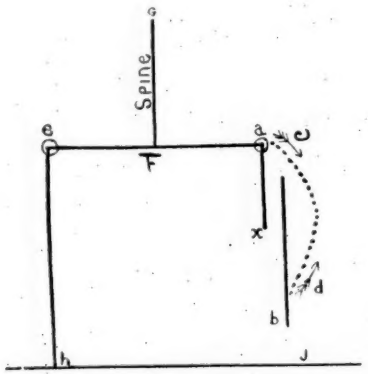

Figure 4.

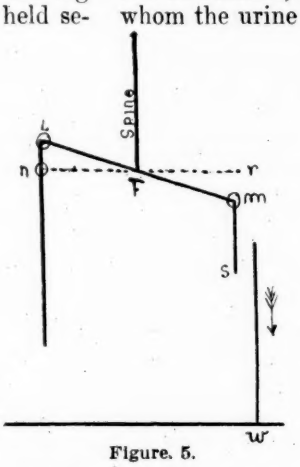

Figure. 5.

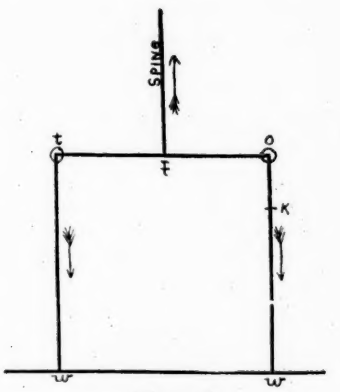

Figure 6.

In Figure 4 let *fg* represent the spine, *a* and *e* the hip joints and *e h* and *a j* the legs. On the fractured leg *a j* there is a muscular pull represented by the dotted line *a b*. This muscular pull is in the two directions represented by the arrows *c* and *d*, in consequence of which the fragments will pull by each other at *x*. In Figure 5 imagine the weight *w* attached only to the broken leg, and the pelvis will be pulled away from the normal line *n r* to the line *l m*. The fulcrum, in Figures 4 and 5, is at *F*. As the leg is pulled down to *l m* the fragments still remain riding by each other at *s* and the fracture still remains incompletely reduced. In Figure 6 the spine holds the pelvis up at the fulcrum *F*. and, the weight or pull being applied to both legs, the line *t o* is kept at its proper angle, with the spine and both legs are pulled down until they are of equal length, when the fracture at *k* must be completely reduced. Therefore, shortening can be prevented only by making extension on both legs. Fifteen pounds is usually attached to the fractured leg and twenty to the well leg. Encased in plaster, of course, there is more danger of the skin getting in trouble, because it can not be bathed and powdered, whereas in the modified Thomas splint every square inch of the skin, unless pillows are used, can be reached, bathed and powdered. In patients with whom the urine is troublesome, it is much more difficult to keep from getting sore, as the plaster is apt to get wet, followed by excoriation and then a slough.

II. FRACTURE OF THE SHAFT, ESPECIALLY IN THE UPPER THIRD.

A fracture in this location is also a very hard one to care for with the ordinary method in use, and shortening is almost a certainty, except in children, and in them it is the rule rather than the exception, judging from the cases brought to me after treatment. It was really for such cases that the frame with the windlass attachment was made. The patient is placed on the frame and prepared with cotton and felting, as already described. The extension is applied to each leg and traction made until the fracture is absolutely reduced, as proved by measurement, and then plaster is applied, as already outlined. This method seems to be the most effective way to deal with this class of fractures. In the aged, however, pressure sores become a real danger, as I have lost one patient, aged 75, from this cause, while with a modified Thomas splint, with proper care, such a condition should not arise.

FURTHER TREATMENT COMMON TO BOTH CLASSES.

These fractures may be left in plaster or splint for six to eight weeks if possible. If any trouble arises it would probably be perfectly safe to omit them sooner,

but each case must be considered by itself and treated accordingly. In fracture of the shaft, walking is allowed with crutches immediately after the removal of the plaster. In regard to the *x*-ray in these particular fractures, it is of the utmost importance taken before treatment is applied. It gives absolute knowledge as to the kind of fracture, and when it is taken after the fracture has been reduced and fixed (if in plaster) it shows how well the reduction has been accomplished and whether the treatment is effective. The *x*-ray picture is a *sine qua non*.

In cases of non-union, whether in the neck or shaft, operation should be advised, as a good result after operation is much more likely to be obtained if done early than if months are allowed to elapse. In cases of non-union in the neck of the femur, the fragments should be pegged, a wire nail or bone peg is satisfactory, but I think a nail is rather preferable. In non-union of the shaft of the femur, canvas is stretched from end to end of the holding frame and sterilized sheets placed over it, thus making it a very satisfactory operating table. The leg is then pulled down to length, incision is made, the fragments are sutured (animal sutures), the wound is closed, and plaster of Paris applied while being held in position by the frame.

SUMMARY.

1. Find out accurately as may be and with the *x*-ray, if possible, exactly what the condition is. Portable *x*-ray outfits now permit radiographs at the bedside, so that fractured necks and shafts may be accurately studied in this way.
2. Reduce the fracture under ether and apply the Thomas splint in fractures of the neck and plaster of Paris in case of fractured shaft.
3. Practice eternal vigilance all through the bed treatment to prevent pressure sores or any other trouble from arising.
4. Operate immediately on all cases of non-union.

TREATMENT OF LOBAR PNEUMONIA.*

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The subject of this paper will probably be regarded as uninteresting, so much having been said and written on it without producing any form of treatment that has appeared to modify much the course of pneumonia. More than one has mentally summed up the position with the thought: "We trust in the future."

Yet we can not rest content with the present state of things. Osler calls pneumonia the "Captain of the Men of Death," and says it outranks consumption as a cause of death. At the Johns Hopkins Hospital the death rate in pneumonia is about 1 in 4. Of course, many of the patients come to the hospital only when the disease is far advanced and from most unfavorable surroundings. THE JOURNAL of the American Medical Association, in an editorial, quotes Dr. E. F. Wells' statistics published in 1902, in which it was shown that the mortality from pneumonia was 18.1 per cent. This was based on a study of 233,730 cases.

In the past I have found the different methods of treatment of little avail in influencing the disease, but I now desire to give first place to the treatment advocated by Dr. W. J. Galbraith,[1] chief surgeon of the Cananea Consolidated Copper Company, Cananea, Mexico. It is based on the view that quinin in sufficient doses acts as an antitoxin in pneumonia, destroying the micro-organisms and their produets which produce sepsis.

QUININ AND IRON.

As long ago as 1884, when I was an interne in the hospital, an old man not expected to recover from pneumonia was given, by the mistake of a nurse, large doses of quinin and iron intended for a case of erysipelas, and the man recovered. I felt at the time that the recovery was more than a coincidence. I had been taught by my teacher in medicine, one of the greatest physicians of America, the late Prof. Alfred L. Loomis, to value quinin in this disease. He wrote in 1881 as follows:

> In the sulphate of quinin I believe we have a true antipyretic; it has been claimed that this remedy is an arterial sedative. By its action on the nervous system it increases the power of the heart's action. On this principle, for the past four years my rule of practice has been to place all patients with pneumonia of a severe type on the sulphate of quinin, in doses varying from twelve to thirty grains each day, and it is the exception for a pneumonia patient not to show a marked reduction of temperature within thirty-six hours after the commencement of its use. It does not seem to arrest the progress of the pneumonia, but it lowers the temperature, shortens the duration of the febrile stage, and hastens the stage of resolution to complete recovery.

It will be seen that Dr. Galbraith endorses these views, but by doses three times as great he is able to go further than these statements. Dr. Galbraith does not use any local application, as poultices, and in a letter to me he says he dresses his patients in as light weight clothing as he possibly can; that thorough ventilation and flushing of the kidneys with an alkaline water are of the utmost importance; and that, as a rule, he administers the quinin in wafers and the chlorid of iron in a syrup mixture. In answer to the question as to unfavorable symptoms produced by such large doses of quinin, he says that with the exception of a slight ringing in the ears, in two or three cases only, not an unfavorable symptom has ever been reported.

DR. GALBRAITH'S TREATMENT.

When so many therapeutic remedies are being put forward only to prove to be failures, I do not wish to advocate a remedy without being myself convinced that it is worthy of trial. I believe with the great majority whom I have quoted, who have writtten in THE JOURNAL A. M. A., that, to use the words of Loomis, quinin lowers temperature, is an arterial sedative, shortens the duration of the febrile stage, and hastens the stage of resolution. But I am further inclined to believe with these writers that in the large doses advocated by Dr. Galbraith, it acts as a specific, as much as the antitoxin is in diphtheria. It will be noticed that those who formerly followed the Juergensen treatment did not give the immediate initial dose of from 40 to 70 grains called for by Dr. Galbraith. They used half measures. Yet in all cases I have seen reported there is only one case mentioned in which there were any symptoms of quinin poisoning. In this case there was profound deafness and almost complete blindness. The case is reported by Dr. Gustetter, who attributes the condition to a cumulative action from the use of quinin in pill form, which he strongly deprecates. Both the symptoms passed off within ten or twelve hours.

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* Part of a paper delivered before the Maritime Medical Association at Prince Edward Island, July 12, 1906.

1. THE JOURNAL A. M. A., 1906, February 10.

My own experience with the treatment, following Dr. Galbraith's methods, numbers four cases, three in the Victoria General Hospital, Halifax, and one in private practice in the country. I may say that the giving of 50 grains of quinin at one dose to a patient appeared at first like heroic treatment, and more than once my house surgeon, after taking down my prescription, handed it to me to be initialed, so as to be relieved of any personal responsibility in the matter. The result hardly showed as much discomfort from 50 grains of quinin as from 10. The colored girl, Annie T., in Case 2, was not even a little deaf. The case in which there was most deafness was the last one cited, Case 4, and I feel that I bungled the treatment of this case from unnecessary timidity. I gave only 7½ grains of quinin every four hours at first, and it was not till double pneumonia set in on the eighth day that I proceeded to give 30 grains at once, 72 grains in twenty-four hours. This was late for a specific treatment to be effective. We are told that the dose should be large when given late in the course of the disease. I should perhaps have given a larger dose. But the patient being far away, without a trained nurse, and the treatment new, was the reason of my hesitation. In all the cases I should have given larger doses.

As to the method of giving so large a dose I found that if given in several capsules the quinin could be taken without inconvenience or if, as in one case, it was administered suspended in milk. In none of the cases did the stomach fail to retain it. The three hospital cases are reported by Dr. Cliff Goodwin of the interne staff of the Victoria General Hospital. The four cases cited from my own experience seem to prove the safety of the method of treatment. The total number of cases reported from all sources is not large enough to establish the efficacy of the treatment, but it is large enough, in my judgment, to indicate that the method should be further tried by all members of the profession in cases of lobar pneumonia.[2] I believe the earlier the treatment is begun the more marked is the result.

CASE 1.—Reported by Dr. Cliff Goodwin.

History.—W. J., age 28, colored, took a chill March 7, while working in a saw mill. The cold chills ran all over him and he had to leave his work and go home to bed. After some time he thinks he must have had a very high fever, for he felt as if he were burning up. Pain in the right side began shortly after the chill, of a sharp and stabbing nature, especially when a long breath was taken. This continued to increase in intensity. Cough began at the same time as the pain, with some expectoration of blood. On March 8 he had severe headache, pains in the limbs and back and felt very thirsty and weak.

Examination.—He came to the hospital March 9, and was examined by Dr. Smith. He was a fairly well nourished man; appetite was poor; tongue was heavily coated with a yellowish fur and clean on the edges. Chest inspection showed the following conditions:

Respiration: Short, shallow and panting.

Palpation: Fremitus increased in right base and anteriorally in right apex.

Percussion: Dulness in right base beginning one inch above lower angle of the right scapula.

Auscultation: Respiratory murmur feeble and high pitched, with fine crepitant râles at the base.

Left lung appeared normal.

Pulse, 110; temperature, 104.5; respiration, 48.

Treatment.—He was given quinin sulphate, 50 grains at 3 p. m., suspended in milk, to be repeated in doses of 30 grains after 3 hours, if temperature was above 102. At 6 p. m. his pulse was 98; temperature, 101.3; respiration, 40.

March 10: Patient feeling much better this morning; complained of very little buzzing in ears. Pulse, 70; temperature, 101; respiration, 32. Pain in side was not so bad.

March 11: Patient continued to improve. Pulse, 60; temperature, 99.5; respiration, 34. He felt comfortable. There was no pain in the side, not much cough, appetite coming back; at 9 a. m. his temperature was normal.

Patient continued to improve as shown by 3-hour chart, which was omitted on March 19, 1906.

Besides quinin treatment, all this patient had was a laxative:

℞. Hyd. chlor. mit.
Sodii bicarb.
Pulv. saccher. lactis, āā.....gr. vi | 36

And a mixture:

℞. T. ferri. mur.....ʒii | 8
Syr. simple ad.....ʒi | 30

M. Sig.: One dram every 4 hours with water.

CASE 2.—Reported by Dr. Cliff Goodwin.

History.—A. T., aged 17, said that on March 29, got her feet wet and contracted a severe cold. She was admitted on April 1, complaining of the usual symptoms of pneumonia, pain in side, sore limbs and back, etc. Breathing was rapid with respirations from 30 to 50 and good deal of cough which gave her great pain. Mustard plasters were applied to side. She was examined by Dr. Smith.

Course of Disease.—April 2: In the morning her temperature was 103.8; pulse, 110; respiration, 52.

April 5: There was some dulness on percussion all over right lung. Respiratory murmur was slightly diminished. Respiration was prolonged in right apex. Vocal fremitus increased and great number of adventitious sounds. Posteriorly there was bronchophony on right interscapular and suprascapular regions; also slight involvement of left base.

She was given quinin sulphate; 40 grains at 12 o'clock; at 3 o'clock her temperature was 102; pulse, 90; respiration, 45. At 9 p. m. temperature, 98.5; pulse, 90; respiration, 30.

April 3: Temperature went up again to 103 and dose was repeated, which brought it back to 98.5 in the evening, and the patient seemed much easier.

April 4: Patient had only a slight buzzing in ears, and though she complained of severe headache up till now, to-day the headache did not bother her. On April 4 and 5 doses were repeated of 30 grains each and on April 6 her temperature went up for the last time to 102.8, according to the 3-hour chart, bringing a crisis on the sixth day after the beginning of the disease, for the girl said she had no fever before Sunday morning, April 1, and only complained of a cold. She continued to improve and on April 15 she was allowed out of bed. April 19 she was discharged recovered.

CASE 3.—Reported by Dr. Cliff Goodwin.

History.—W. G., aged 16, was admi ed to hospital June 2, in an unconscious state. He was sent first to surgical ward and next morning came down to medical ward with the diagnosis of pneumonia.

Course of the Disease.—Patient was visited by Dr. Smith on June 3, who ordered dose of 48 grains of quinin at 12 p. m., and a 3-hour chart. Temperature was 104.8; pulse, 98; respiration, 30. At 9 p. m.; temperature, 99; pulse, 82; respiration, 38.

June 4: His temperature this morning was up to 104.8; pulse, 96; respiration, 38. He was given 18 grains of quinin at once and after that, every 3 hours, 6 grains of quinin. Temperature was 100.2 that night at 6 o'clock.

June 5: There was some dulness on percussion all over right lung; respiratory murmur was slightly diminished; scapulary region was pectoriloquy. The 6-grain doses were kept up every 3 hours until temperature remained about normal, which was on the seventh day of his admission to the hospital. He was discharged June 12, recovered. He complained really more of buzzing in the ears with 6-grain doses than he did with the 48 grains of quinin given at one time.

CASE 4.—Case in Dr. Smith's private practice.

History.—N. T., aged 19, on Thursday evening, April 5, took a severe pain in the left side. I was not called to see her until

2. NOTE, November, 1906: In a letter just received Dr. Galbraith writes: "Over three hundred cases now (of pneumonia) with a mortality of about 2 per cent."

Sunday, April 8. Family history showed that one sister, an aunt and an uncle died of consumption.

Examination.—I drove three miles into the country to see the patient at her home, which was sanitary and comfortable. I found the following: Temperature, 102; pulse, 132; respiration, 40. Lower lobe of left lung was almost flat on percussion. There was broncophony. Breathing was labored and shallow. Sputum was pink in color and tenacious. Patient complained of severe pain in left side.

Diagnosis: Pneumonia left lower lobe.

Treatment.—Quinin sulphate, 7.5 grains every 4 hours and tincture of the chlorid of iron, eight drops every 4 hours. Hot mustard and linseed poultices were applied to left side.

Course of Disease.—April 9: Temperature, 103.2; pulse, 120; respiration, 36. Quinin and iron were continued in same doses and one bottle of Vichy water was ordered to be taken daily.

April 10: Temperature, 102.6; pulse, 115; respiration, 48. There were slight dulness and signs of involvement of right apex. Pain in side continued. Quinin and iron and Vichy water were continued.

April 11: Temperature, 102; pulse, 116; respiration, 49; breathing was rapid, shallow and difficult.

April 12: Temperature, 99; pulse, 102; respiration, 36. The patient appeared much better and this being the seventh day of the disease it appeared the crisis had arrived for the better.

April 13: Temperature, 102.5; pulse, 110; respiration, 36. Patient complained of severe pain on right side. The right base had become involved. Percussion showed marked dulness over whole of right lower lobe and some dulness over right upper lobe. The left base appeared to be closing up. The case was an anxious one.

Treatment.—Quinin, 30 grains at once and 12 grains afterward, every 4 hours as long as temperature continued about 102; 6 grains every 4 hours in any case. Iron and Vichy water were repeated. Poultice was applied to right base. Sputum contained bright red blood.

April 14: Temperature, 102; pulse, 116; respiration, 36. Patient complained of deafness, but not much more than from the 7.5 grain doses; 30-grain dose was repeated and then 12 grains every 4 hours. Patient was now taking 72 grains of quinin in 24 hours.

April 15: Tenth day of disease. Temperature, 102.3; pulse, 111; respiration, 39. Patient had again taken 72 grains of quinin in 24 hours.

April 16: Temperature, 102; pulse, 112; respiration, 38. No quinin to-day as 72 grains for 24 hours had not been all taken. Bovinine ordered.

April 17: Temperature, 102.3; pulse, 109; respiration, 39. Diarrhea (caused from bovinine), chalk mixture ordered and quinin, 36 grains for next 24 hours.

April 18: Temperature was nearly normal. Sputum was clear. After this the patient made a good recovery.

THE ANTITOXIN TREATMENT OF TERTIAN MALARIAL INFECTIONS.

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The observations here recorded are in sequence of others formerly made on this subject at Fort Reno, O. T.[1]

In that series the antitoxin was developed by inoculating rabbits with defibrinated blood of patients harboring the parasite of tertian malaria (*Plasmodium vivax*) or by the bites of mosquitoes infected with that protozoön. Four patients in that series were treated with the hypodermic injections of defibrinated blood drawn from inoculated rabbits, one with serum, two with desiccated serum in salt solution and two with desiccated erythrocytes in salt solution. The injections of defibrinated blood and of desiccated erythrocytes and one injection of desiccated serum were followed by more or less prompt recovery. The undesiccated serum and serum in salt solution had been given in such small quantities (0.75 gm. and 0.50 gm., respectively) that no result could reasonably have been expected.

In the present series the animals employed were monkeys, indigenous to the Philippines "*Cynomolgus mendinensis* (Mearns)" and goats. The former animals gave more satisfactory results than did the latter, but for reasons which suggest themselves injections of their blood were discontinued as soon as material from another source was available. Though six monkeys were inoculated, the blood from only one was utilized. In thirty-four days the animal received four inoculations, each consisting of 2 c.c. of defibrinated human blood containing the *Plasmodium vivax*.

The charts of the several monkeys showed as a rule a diurnal range in the rectal temperature of from two to three degrees or rarely five degrees. Two animals were infected with uncinaria, and this may have influenced the temperature curve in these cases. The injection of human blood containing the malarial parasites did not appear to have any definite influence on the temperature curve, though in monkeys No. 1 and No. 5, it assumed a remittent instead of its usual intermittent character. In monkey No. 1 it ranged for two weeks between 99 and 102 F., then becoming intermittent as before. In monkey No. 5 its course for sixteen days was quite similar.

In blood specimens from none of these animals was the malarial parasite demonstrated, either prior to inoculation or immediately subsequent thereto. The results of examinations made for it at frequent intervals from fifteen minutes to forty-one days after inoculation were invariably negative. In this connection I would cite the contrast to a series of inoculations made on human beings at Fort Reno, O. T., and previously unreported. Two of these patients were colored and five were white. Each received hypodermically on April 6, 1905, from the same patient, 1 c.c. defibrinated blood containing the *Plasmodium vivax*. All the white patients developed malaria in from nine to forty days (average, twenty-one days), but neither of the colored patients did so, though one had had an attack of tertian malaria in the preceding autumn.

The patients treated with monkey blood are as follows:

CASE 1.—Admitted Feb. 25, 1906. Temperature 104 F. Laboratory examination showed abundant quartan parasites in the blood.

February 26: The patient received hypodermically at 3 p. m., 5 c.c. defibrinated blood of monkey No. 5.

February 28: Parasites were demonstrated in blood at 9 a. m. Chill and febrile paroxysm occurred at 4 p. m.

March 1: Blood examination was positive.

March 2: Chill and febrile paroxysm occurred at 3 p. m. Blood examination was positive. Quinin was ordered. Recovery was uneventful.

CASE 2.—Admitted March 5, 1906. Temperature 104.6 F. Blood examination at 8:30 a. m. showed numerous benign tertian parasites.

March 6: Patient received 5 c.c. defibrinated monkey blood.

March 7: One benign tertian parasite was found in twenty minutes' search. No chill nor fever.

March 8: Pronounced eosinophilia was present. No parasites. No chill nor fever.

March 10: Eosinophilia was increased. No parasites.

March 14: Eosinophila was diminshed. No chill nor fever since injection.

1. Medical Record, New York, Dec. 24, 1904.

CASE 3.—Admitted March 27, 1906. Temperature 104.2. F. Laboratory examination showed numerous benign tertian parasites in blood.

March 28: Patient received 10 c.c. defibrinated blood of Monkey No. 5.

March 29: No chill nor fever. One parasite was found in blood after eighteen minutes' search.

March 30: No parasites were found in blood. No recurrence of chill or fever since inoculation.

CASE 4.—Admitted March 27, 1906. Temperature 105.6 F. Diagnosis was confirmed by blood examination on same date. Malarial fever, benign tertian, parasites were very abundant, one brood.

March 28: Patient received 5 c.c. defibrinated monkey blood.

March 29: Patient had chill. Temperature rose to 104.8 F. Blood examination revealed numerous parasites.

March 30: Patient received 5 c.c. defibrinated blood. Blood examination at that time was positive.

March 31: No chill nor fever. Blood examination was negative.

April 3: Blood examination was negative. No recurrence of chill nor fever.

CASE 5.—Admitted March 28, 1906. Temperature 105.2 F.

March 29: Blood examination for tertian parasites gave positive result; one brood. Patient received 10 c.c. defibrinated monkey blood.

March 30: Blood examination revealed one parasite in twenty-five minutes' search. No chill. Temperature rose to 99.6 F.

March 31: No parasites were found in the blood. Temperature rose to 99.2 F.

April 3: No recurrence of chill or fever.

CASE 6.—Admitted April 17, 1906. Temperature 103.4 F. There was a history of numerous attacks of tertian malarial fever in the past nine months.

April 18: Temperature rose to 103.2 F. Blood examination showed abundant tertian malarial parasites, double infection. Patient received 5 c.c. defibrinated monkey blood.

April 19: Tertian parasites were found in blood. Chill. Temperature rose to 102.8 F. Injection repeated.

April 20: Few tertian parasites were found. No chill, but temperature rose to 101 F.

April 21: Tertian parasites were very rare. No chill nor fever.

April 22: Blood examination was negative and so continued. There was no recurrence of chills or fever until June 6, when the patient was readmitted suffering from benign tertian malaria. This was probably a recurrence, but may have been due to another infection. The patient was again given 10 c.c. of defibrinated monkey blood on June 7, but recovery did not occur nor did the parasites disappear until this dosage was repeated four days later.

No animals other than monkeys were obtainable in the vicinity of Malabang, Mindanao, P. I., where these observations were conducted, but three goats were obtained from Zamboanga, a point about 125 miles distant. On their arrival it was found that all the animals were pregnant. Whether this condition had any influence on their power to develop antitoxin is unknown, but no blood was drawn for experimental purpose until they were delivered. Two of these animals received at various intervals injections of human blood containing the *Plasmodium vivax*, each injection containing from 2 to 8 gms. of fluid. Five injections were given to each animal. A rise of temperature of from 1 to 2.2 degrees F. followed each injection, the temperature remaining elevated for from one week to eleven days. At no time could the malarial parasite be demonstrated in the goat's blood.

CASE 7.—Admitted April 22, 1906. Temperature 104 F. Tertian parasites were found in blood, one brood.

April 23: Patient received 5 c.c. serum from white goat.

April 24: Temperature rose to 101 F. No chill. Parasites were found in the blood.

April 26: Temperature rose to 99.3 F. No chill. No parasites were found in blood.

April 30: There was no recurrence of chill or fever. No parasites were found in blood.

CASE 8.—Admitted April 28, 1906. Temperature 105.4 F. Abundant tertian parasites were found in blood, one brood.

April 29: Patient received 10 c.c. serum from black goat.

April 30: Patient had chill. Temperature rose to 104.6 F.

May 2: Patient had chill. Temperature rose to 105 F. Parasites were found in blood. Patient was ordered quinin.

CASE 9.—Admitted May 1, 1906. Temperature 104 F. Tertian parasites were moderately abundant. Double infection was demonstrated.

May 2: Patient received 6 c.c. serum from white goat.

May 3: Temperature rose to 100.6 F. No chill.

May 4: Temperature rose to 99.4 F. No chill. No parasites were found in blood. Temperature remained normal till May 13, when it rose to 104.2 F., after severe chill.

May 14: Patient had chill. Temperature rose to 104.4 F.

May 15: Patient had chill. Temperature rose to 104.2 F. Parasites were found in blood. Four hours after chill patient received 7 c.c. serum from white goat.

May 16: No chill. Temperature 101 F. Patient received 7 c.c. serum from white goat.

May 17: Temperature was 99 F. on this and on two subsequent days. No malarial parasites were found in patient's blood. There was no further recurrence of chill or fever.

CASE 10.—Admitted May 13, 1906. Temperature 104 F. Tertian parasites (double infection) were found in moderately large numbers.

May 14: Patient received 4 c.c. serum from white goat at 8 a. m. No chill. Temperature rose at 4 p. m. to 101 F.

May 15: No chill. Temperature rose to 100.2 F. Parasites scant.

May 16: No fever. No parasites were found. No recurrence.

CASE 11.—Admitted May 13, 1906. Temperature 104.2 F. Double tertian infection. Parasites abundant.

May 15: Patient received 4 c.c. serum from white goat during the forenoon. In the afternoon the temperature rose to 101 F., after a slight chill.

May 16: No chill. Temperature rose to 100.2 F. One parasite was found after twenty minutes' search.

May 17: Temperature 99.2 F. Blood examination was negative.

May 18: Temperature normal. Blood examination was negative. No recurence.

CASE 12.—Admitted May 14, 1906. Temperature 104.6 F. Numerous quartan parasites were demonstrated in blood.

May 17: Patient had chill. Temperature 104 F. Patient received 10 c.c. serum from white goat.

May 20: Patient had temperature 103.8 F. Quinin was ordered. Recovery uneventful.

CASE 13.—Admitted May 18, 1906. Temperature 103 F. at 4 p. m. Blood examination showed mild double tertian infection.

May 19: Patient received 4 c.c. serum from white goat at 11 a. m. Chill occurred at 4:30 p. m., and temperature rose to 100.8 F.

May 20: No parasites were found in blood. Temperature rose to 99.4 F. without chill.

May 21: No fever. No parasites were found in blood. No recurrence.

CASE 14.—Admitted May 27, 1906. Temperature 105.6 F. One brood of tertian parasites were found in blood.

May 29: Patient had chill. Temperature rose to 105.4 F.

May 30: Patient received 7 c.c. serum from white goat.

May 31: Patient had chill. Temperature rose to 106 F. Patient received 7 c.c. serum white goat.

June 2: Patient had chill. Temperature reached 104.4 F. Patient received 7 c.c. serum from white goat.

June 4: Patient had chill. Temperature 103 F. Patient received 7 c.c. serum from white goat. A few parasites were found in blood.

June 6: No chill. Temperature rose to 99 F. No parasites were found in blood. No recurrence.

CASE 15.—Admitted May 28, 1906. Temperature 103.6 F.

May 29: Tertian parasites, one brood, were found in blood.

May 30: Patient had chill. Temperature rose to 103.8. Patient received 7 c.c. serum from white goat.

June 1: Chill occurred. Temperature rose to 102.4 F. Injection of 7 c.c. white goat serum.

June 3: Chill occurred. Temperature rose to 102 F.

June 5: Chill occurred. Temperature rose to 102.2 F. Parasites were demonstrated in blood. Quinin was ordered.

CASE 16.—Admitted June 5, 1906. Temperature 105 F. Blood examination same date showed double benign tertian infection, severe.

June 6: Chill occurred. Temperature rose to 105.4 F. Patient received 5 c.c. serum from white goat.

June 7: Chill occurred. Temperature rose to 104.2 F. Patient received 10 c.c. serum from white goat.

June 8: Patient had chill. Temperature rose to 103.8 F. Quinin was ordered. Recovery uneventful.

CASE 17.—Admitted June 6, 1906. Temperature 104.6 F. Blood examination showed presence of one brood of benign tertian parasites, moderately abundant.

June 7: Patient received 15 c.c. serum from black goat.

June 8: No chill. Temperature 99.4 F.

June 9: Temperature 98.8 F. No parasites were found in blood. No recurrence nor reappearance of parasites.

CASE 18.—Admitted June 21, 1906. Temperature 105.2 F. Blood examination showed severe double infection with benign tertian parasites.

June 22: Patient received 10 c.c. of defibrinated blood from black goat at 9 a. m. Chill occurred in afternoon. Temperature rose to 105.6 F.

June 23: No chill. Temperature rose to 99.6 F. No parasites were found in blood.

June 24: No chill. Temperature rose to 99.2 F.

June 25: No chill. Temperature normal. No recurrence.

CASE 19.—Admitted June 25, 1906. Temperature 103.8 F. Double benign tertian infection, parasites moderately abundant.

June 26: Patient received 15 c.c. defibrinated blood from black goat. Chill. Temperature rose to 103 F.

June 27: No chill. Temperature rose to 100.2 F. Parasites were found in blood.

June 28: No chill. Temperature was normal. Parasites were found in the blood.

June 29: No parasites were found in blood. No recurrence.

CASE 20.—Admitted June 28, 1906. Temperature 104.4 F. Blood examination revealed single brood of benign tertian parasites, moderately abundant.

June 29: Patient received 15 c.c. defibrinated blood from black goat.

June 30: A few parasites were found in blood. No chill. Temperature rose to 99.2 F.

July 1: Temperature rose to 99 F. No parasites were found in blood. No recurrence to date.

CASE 21.—Admitted July 6, 1906. Temperature 104 F. Blood examination showed double tertian infection, moderately severe.

July 7: Patient received at 9 a. m. 20 c.c. defibrinated blood of black goat. Chill occurred and temperature rose to 104.8 F. in the afternoon.

July 8: No chill. Temperature was normal. No parasites were found in the blood.

July 9: No chill. Temperature was normal. No parasites were found in blood.

July 10: No chill. Temperature was normal. No parasites were found in blood.

CASE 22.—Admitted July 4, 1906. Temperature 104.2 F. double infection, moderately severe. Benign tertian parasites.

July 5: Patient received 15 c.c. serum from black goat. Chill occurred and temperature rose to 103.8 F. during the afternoon.

July 6: Chill occurred. Temperature in afternoon was 104.6 F. Parasites were found in blood. Quinin was ordered. Recovery uneventful.

An analysis of the foregoing cases will show that of twenty cases of benign tertian infections treated by the injection of defibrinated blood from repeatedly inoculated monkeys or goats, or by serum drawn from the latter animals, seventeen patients recovered without further medication, while three were apparently quite uninfluenced by this treatment. Also after the usage of goat's blood or serum, the abrupt disappearance of fever was not so marked as was that when monkey's blood was employed, but a slight fever persisted for several days thereafter. A repetition of the injections was necessary in three cases, in which the patients eventually recovered without other treatment. In two cases the parasites reappeared in the blood and symptoms recurred, in one case after an interval of nine days, and in another after an interval of forty-five days. In each case, however, they again disappeared after antitoxin treatment was instituted.

In the cases reported above appear two of quartan type, which were altogether uninfluenced in the slightest degree by antitoxin treatment. This result was quite disappointing, but later I have learned that it is in line with Koch's discovery that naturally acquired immunity against one type of the organisms does not confer immunity against another. This observation has a bearing on Saveran's contention that all types of the malarial organism are essentially identical.

To further test this conclusion, five cases of estivo-autumnal infection were treated by the injection of goat's serum used with success against tertian parasite. The quantity used in these cases was from 5 c.c. to 9 c.c., and was perhaps inadequate. In one case the fever disappeared for four days, but the parasites did not leave the peripheral blood; the other cases were quite uninfluenced. The persistence of the parasites in the peripheral blood, in some cases above recorded, after the fever had disappeared, is a phenomenon similar to that witnessed in partial natural immunity, and was noted in my former series.

Two series of control observations were conducted. The first of these comprised tertian cases, which received no treatment from a period of from eight to fourteen days. The second comprised those patients suffering with malaria, who received injections of serum or defibrinated blood drawn from the normal goat.

The former series comprised sixteen cases and was investigated in order to note what proportion of patients suffering from benign tertian infections would recover spontaneously if kept in bed on liquid diet. In nine of these cases the fever of the malarial paroxysms ranged from one to two and eight-tenths degrees lower after the patients had been in bed for several days (the period varying in different cases), but in only two cases did it disappear entirely and spontaneous recovery ensue. Both these patients were later admitted with a recurrence of the fever shortly after their discharge. This is a much smaller proportion of spontaneous recoveries than I have seen occur in another similar series of control cases at Fort Reno, O. T., already reported, and demonstrates the greater seriousness attending a case of malaria in this climate, where human vitality is depressed and proprotozoön virulence is enhanced.

In this connection attention is invited to the fact that in the tropics many cases in which a diagnosis of malaria is made, but is not confirmed by blood examinations, and in which spontaneous recovery occurs (usually) from three to five days, are in fact either cases of slight sun-traumatism or toxemia by the absorption of leucomains from the intestinal tract. Manson discusses these mistaken cases of sun-traumatism in his textbook, but the only discussion of autointoxication of intes-

tinal origin which may be mistaken for malaria, which I have encountered, was published by Ross, I believe, in an Indian medical journal in 1896.

The second series of control cases were treated with serum or defibinated blood of the normal goat. This comprised eight cases of estivo-autumnal malaria, five cases of benign tertian malaria and one case of mixed infection of both these types; each patient received 15 c.c. of normal goat serum; two other patients with estivo-autumnal infection and two of benign tertian infection each received 10 c.c. of the defibrinated blood from the same animal. In no case did any amelioration of the symptoms occur.

From the cases here recorded it would appear that the successive inoculations of monkeys or goats with blood containing the *Plasmodium vivax* gives rise in those animals to an antitoxin which, when injected in adequate dosage into human beings, may be followed by disappearance of the parasites from the circulation and disappearance of the symptoms of malaria. This agent has no apparent influence on infections caused by a variety of the malarial parasite other than that from which it was developed.

The researches of Koch in Africa, James in India and Kendall in Panama indicate that a certain degree of natural immunity against malaria can be acquired. Craig in our own service has reported that this exists to a limited degree in the Philippines.

Last December, while working along these lines, I examined the blood of forty native children in the neighboring town of Malabang, and was able to demonstrate that susceptibility to malaria apparently diminished as age increased. Definite conclusions of scientific value, however, were not possible as the exact age of many children could not be learned, and size or other characteristics had to be accepted as the criteria of relative age.

In this connection, attention is directed to the report of the Pasteur Commission, Drs. Marchoux and Simond, appointed to study yellow fever. These observers found that serum drawn from a person convalescent from that disease, when injected into another person, will confer relative temporary immunity to it. On *a priori* grounds it would appear that a suitable animal, successfully inoculated with the organism causing yellow fever, could develop higher immunizing powers than a human being who had been infected but once, and that serum from such an animal would have definite therapeutic value. From a consideration of the character of yellow fever, as compared with that of malaria, to which in many respects it is so similar, it would appear that an antitoxin would be of even more definite value in the former disease than in the latter, as natural immunity is usually developed quickly by one brief attack in yellow fever, whereas in malaria it develops much more slowly and with much less certitude.

Inasmuch as we have no remedies which give in yellow fever such satisfactory results as do quinin, arsenic, etc., in malaria, and as the mortality of the former disease is relatively high, especially in epidemics, it is apparent that investigations conducted with a view of securing a specific remedy for it, are expedient. It is suggested that it may be discovered along lines similar to those here followed, i. e., by successive injections of human serum containing the organisms into a suitable animal. Such a remedy should have protective as well as curative properties. It is believed indeed that an antitoxin against malaria, when better developed than has heretofore been feasible, will be of practical value as a prophylactic rather than as a curative agent.

It is a pleasure to express my appreciation of assistance rendered me in this research by my official superiors in the medical department, and to acknowledge my obligations to First Lieutenant Henry L. Brown, Assistant-Surgeon, U. S. Army, who has rendered me much valuable aid in many ways, and to Contract-Surgeon Edward E. Lamkin, who procured for me many of the animals used in these experiments and assisted me in obtaining blood specimens from the native population of Malabang.

Clinical Notes

INOPERABLE AND DEEP-SEATED CARCINOMAS AND THEIR TREATMENT WITH ROENTGEN RAYS AND RADIUM.*

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Radiotherapy, being comparatively new and in its developing stage, so to say, like every other science, suffers more or less from men who meddle with it without mastering it, and from those who think carelessly, generalize rapidly, rashly, and, as Sumner says, make concessions hastily without proper investigations, experimentation and progressive study, which is the only path for repression of ignorance and charlatanism. A host of writers have been busy for the last few years introducing conflicting and baseless notions which, for want of competent criticism, found their believers on the one side, while on the other some of our best men made a boast of turning their backs on the real scientific method of new treatments, which in many hopeless cases gave not only relief but prolonged the life of those who were suffering and beyond help. To use the Roentgen rays, the rays of radium, or any other rays in every chronic case, in every lesion of different character, would be a nonsense, and it is just as bad a mistake not to apply the new method of treatment in suitable individual cases.

In all our work in this peculiar branch we are forced to investigate ratios at the limit or other features of limiting cases and analyze their processes sufficiently to classify them according to their individualities and to treat them individually. We know that the Roentgen ray and even radium will cure some superficial and malignant lesions, but we also know that the deeper growths and lesions are more doubtful in their prognosis, because we have to obviate here the difficulty of bringing as much as possible of the best rays of sufficient energy to destroy the cells of the lesion proper without destroying the cells of healthy overlying tissues. And, as has been stated many times before in the study of the effects of the Roentgen rays on the tissues and blood, the action itself seems to be of electrochemical character with selective power for the pathologic tissues.

If we expose a photographic plate to these peculiar rays, the emulsion will be altered chemically by the rearrangement of the atomic structure of the molecules, or the Roentgen rays will produce a change in the absorbing material. The same process will follow the exposure of living tissues, where the radiant energy, in the form of light, will make certain changes in metabolism and in the vitality according to whether it produces stimulation or irritation and will have also some effect on the blood. If that is the case, we can understand why

*Read before the Iowa Union Medical Society, July, 1906.

the bombardment of particles or division of an electrical spark in a vacuum tube and the motion of certain rays of light demonstrate the evidence of chemical action of so-called chemical rays. These chemical rays are found more abundantly in the Roentgen ray than in any other form of light and affect cells, glands, nerves and vessels in the deeper tissues with selective power for pathologic tissues, as stated above—the cells of which in the atomic arrangements are more complex than the cells of normal tissue. To attain results in deeper lesions we must remember that the rays must have the proper energy, must be of proper quality and in proper quantity, to suit each individual case exposed, with all the individual factors of tube and apparatus. To depend in these and similar cases on measuring devices of whatever make would not do at all. Observe the behavior of your tube and then ray the whole tumor, especially its periphery, where there is the most rapid growth and action of the diseased cells, and do not forget that the distance of the tube here also plays its important part with the greater penetration of the rays, which if concentrated may not only shorten the duration of the exposure proper but give some positive results. If we take in consideration the painless procedure or possible combination of this method with radical operation and the chance to destroy, to remove or to absorb the malignant cells several inches from the surface, we will at once grasp the opportunity of this treatment, especially in all malignant cases, in which all other methods failed and in which the surgery needs a coadjutor in inoperable cases. The following results are the best proofs of it.

CASE 1.—Inoperable intra-abdominal carcinoma involving mesentery, mesenteric glands and a portion of the small intestine.

History.—Mrs. McK. was operated on April 6, 1903, for abdominal tumor. It was thought to be connected with the right ovary, but an infiltration into the small intestine was found and a growth as large as the closed fist in the posterior peritoneal part of the mesentery. The growth being malignant and so extensive was not removed. Pathologic examination proved the lesion to be carcinoma.

Roentgen Therapy.—I placed her under the mixed toxin and *x*-ray treatment, given every day in the beginning, regulating the dosage according to the individual characteristics of the patient, and of the regulating Mueller's tube, which in about 90 minutes is required to produce an erythema on the surface 10 inches from the tube of medium penetration, a spark-gap of 4 inches, equivalent to the resistance in the secondary circuit and the milliampermeter reading three-quarters of a milliampere. The tumor entirely disappeared within six months' time. At present the patient is still under observation and feeling well. No opiates, pain, nor recurrence.

CASE 2.—Inoperable carcinoma involving the abdominal wall on the left with mesentery and mesenteric glands and also the spleen.

History.—On Jan. 20, 1903, I learned from Dr. Whitmore, that his patient, Mrs. C., had noticed a large tumor in the upper part of the abdomen and that all symptoms of malignancy were present. The tumor was firmly fixed and seemed to involve the abdominal wall. Small nodules in and under the skin could be felt very easily.

Roentgen Therapy.—The patient was then referred to me and I placed her under *x*-ray treatment at once; at first a high vacuum tube was used every day at a distance of about 25 inches from the abdomen; used my own cylinder for concentration of the best rays right against the tumor. In the incredibly short space of three months the patient was free from pain and returned home. No opiates.

Subsequent History.—The improvement was very temporary, however. The tumor soon began to grow again; the patient complained of the pain in the stomach, but remained otherwise fairly comfortable. *X*-ray treatments were again given, fearing only toxemia and internal metastases.

On May 22, 1903, I made an examination and detected on deep pressure a very slight enlargement of few abdominal deep glands in the region of the recurring tumor, extending from the posterior wall of the stomach to the spleen.

After three months of vigorous treatment she had several attacks of fever lasting for a few days at a time, with symptoms of toxemia, probably from absorption. Her general health, however, improved considerably and a marked decrease in the size of the tumor followed after 236 days' treatment. She had gained ten pounds since the beginning of the second series of treatments, and was better. The entire period of treatment extended over 848 days, during which time the growth disappeared. There was absolutely no pain, no sign of recurrence, and she was able to do her own housework at home. Treatments were given again in June, 1906; autointoxication developed after a few exposures and the patient died 4 weeks later without pain. No opiates.

CASE 3.—Inoperable case of carcinoma of the cecum.

History.—Miss R. was operated on in July, 1905, by Drs. Ristine, Ruml and Littig, for abdominal tumor. The growth was so extensive and so suspicious in appearance that no attempt was made to remove it. Pathologic examination made later proved its malignancy beyond doubt.

Roentgen Therapy.—The patient was then referred to me and I placed her under the *x*-ray treatment, the surgeons using Alexander's serum besides.

X-ray treatments and the injections were given daily. Later when the scar from the incision was a little erythematous radium bromid (50 milligrams) of 7,000 activity, in an aluminum tube, was used to prevent infiltration superficially.

Course of Disease.—In December the patient developed high temperature with acute abdominal symptoms, pointing to local peritonitis. She was seriously ill and it was thought she would not survive the attack. An abscess formed in the original scar, which had to be opened and drained. On account of her general condition the *x*-rays and radium treatment had to be stopped.

On Jan. 15, 1906, microscopic examination of the discharge was made; it showed pus mixed with blood, and the débris of carcinomatous tissue sloughing away with fibrous tissue predominating; no feces.

On the left thigh an abscess formed, due, perhaps, to the injections of the serum, which also had to be stopped. The nodules and enlarged iliac glands almost entirely disappeared with the four weeks' rest and general treatment at home and the original tumor showed considerable decrease in size.

The patient remained well until March 12, when it was again necessary to give the *x*-ray treatments. At present, they are being given three times a week, the general health of the patient being comparatively good. She has gained 15 pounds. The disease seems to have been arrested and life prolonged without pain and without any opiates, as yet. A fecal fistula developed and closed and she slowly recovered from a few attacks of marked toxemia, but remained free from recurrence. The glands to date are not infiltrated. There is, though, a small mass over the cecum at the site of the original tumor.

Beside these three very interesting cases, I have had about ten others since 1903. Two of the remaining patients in whom the tumor completely disappeared have since died, one of internal, the other of general metastasis; in two other cases a fatal issue is expected at any moment. One patient is still living with recurrence that has not yielded to the combined *x*-ray, toxin and radium treatment, with observation of the rules of hygiene, proper nourishment and exercise, although there has been improvement.

These facts show beyond doubt that in these and similar cases we must not delay with our operative procedures, but if possible make an exploratory incision to find out the real status of the lesion in every inoperable and deep-seated case of carcinoma, and then ray the growth as soon as possible to save the patient from suffering

and to make him free from a local or general recurrence. In primary operable malignant tumors it is well, perhaps, to ray the field for about ten days before the operation, and at once after the operation, particularly in carcinoma and sarcoma, to prevent recurrence or infiltration into the glandular tissue. An area three or four inches larger than that of the original tumor is exposed to a hard tube; in fact, the harder and deeper the lesion the harder should be the tube.

HYSTERO-EPILEPSY IN A CHILD.*

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As there are comparatively few recorded cases of hystero-epilepsy in children, it was thought worth while to record this instance.

History.—Beatrice L., aged 15, was first seen in consultation in New York, Aug. 8, 1906. Parents are healthy and have five other children of normal health. The patient is the second child, the oldest being a boy, aged 18. One child died when four months old of some intestinal disorder. There was a miscarriage ten years ago. There is no history on either side of venereal disease, hysteria, epilepsy or insanity. On the maternal side two sisters died of phthisis before reaching adult life; the grandfather of pneumonia at 53 years of age and the grandmother at 42 years of age of unknown causes. On the paternal side, the grandfather died of lead poisoning at 55 years of age, while the grandmother is in good health at 67 years.

The patient's birth was normal, but for the first six months she was sickly, owing to digestive disturbance. Following the eruption of her first tooth at seven months her health steadily improved. There was little or no disturbance during dentition, and she had no eclamptic attack during infancy. She had none of the diseases of childhood, although exposed to measles and pertussis at home, and had never been under medical supervision until 13 years old. It is said that she has always been quick in her actions and impulsive, but not quick tempered or morose. She was not bright at school, yet until the present attack was able to keep up with the classes of girls of her own age, whose companionship she enjoyed. Since the attack attendance at school has been irregular and ceased altogether during the past year.

In June, 1904, while playing see-saw she fell from about the height of 3 feet, striking the lower part of her back across a log. She had pain over seat of injury for a few days. A month after her fall, when just 13 years old, and during the ordeal of her first communion and confirmation, the strain of which endured for some hours, she fainted. She was carried into the priest's house and put to bed. There was complete loss of consciousness; no rigidity or tonic movements, but she turned constantly from side to side. In about 10 minutes she became conscious but was very weak; in an hour, she was able to walk home. These fainting attacks were repeated every two or three weeks for the next six months. There was loss of consciousness with restlessness on regaining consciousness and a peculiar feeling of the hands which was relieved by rubbing them together. There was no aura or premonition of the approach of the attack, which appeared not to be induced by excitement or strain.

In January, 1905, she had a severe attack. She fell suddenly unconscious to the floor, rolled from side to side with kicking movements, and twitching of arms and face, and emitted cries and shrieks of laughter. There was no frothing at the mouth, no biting of the tongue and no relaxation of the sphincters. These severe attacks continued every week or so until after her first menstrual period, which occurred in April, 1905, and was apparently normal. During this month and also May there were no attacks. The second menstruation was normal.

Menstruation did not occur in June, and since then the periods have been irregular, painful and with an increase in the severity of the convulsive seizures before and during the flow. Attacks were frequent until February, 1906, when they were less severe and she had none during March. In April, however, they were so severe and frequent (two or three a day for two weeks) as to confine her to her bed, she being unable to stand or walk, though the muscular power of her legs seemed normal while on her back. This condition is precisely that termed by the French *astasia-abasia.* She complained of much pain in the lumbar spine and is said to have been delirious about half the time. At times there were intense photophobia and loss of vision; much twitching of the facial muscles, and loss of speech for an hour or so.

Attacks continued at irregular intervals of from three to ten days until the patient was first seen, and had the following general characteristics: They occurred suddenly, without warning except in four or five instances, when they were preceded by a feeling of intense weakness. Nine-tenths of them occurred in the evening between 8 and 9 oclock. Two occurred later, about 11 o'clock, following an evening's musical entertainment, showing the relation of nervous excitement to the convulsion in these two instances, and so apparently differentiating them from the usual seizures.

The first objective symptom was the falling to the floor on her back, the period of unconsciousness being variable. On revival she moaned, the respiration was stertorous; she complained of pain in the region of the heart and later in the frontal or the occipital regions, at times in the throat, back, abdomen, arms or legs, the convulsions being distinctly clonic in type, rarely have they passed through the tonic stage. At times she was delirious, speaking at random and again shrieking and laughing. Just before regaining consciousness the least noise in the room caused marked opisthotonos. Following the convulsion at times she fell into a deep sleep while again on regaining consciousness she felt very weak, but on taking nourishment soon recovered her ordinary strength.

It is to be noted that there were no foaming at the mouth, no tonic spasm, no relaxation of sphincters. She has never bitten her tongue or injured herself when falling, although in one attack she jumped over the foot of the bed, landing on her back on the floor. The average duration of the convulsions was about one hour, some not longer than fifteen minutes, others lasting three hours and over. There have never been more than three attacks in one day and the interval between has in one instance been two months. As a rule not more than one week intervened.

Examination.—The patient's eyes were examined at the Brooklyn Eye and Ear Hospital, June, 1906, when she was told that there was no ocular trouble. Eyes had been examined twice before with the same result.

Examination showed a well-developed girl with good muscular strength, tall for her age; forehead slightly protruding, eyes deep set, and the face somewhat wedge-shaped; expression rather dull. Conjunctivæ and mucous membranes pale, neck thick, with some enlargement of the lateral lobes of the thyroid gland, especially that of the left side; position slightly stooping; chest inclined to be flat; abdomen prominent.

Lungs on examination were found normal. There was no enlargement or displacement of the heart. In the recumbent posture a loud late systo c murmur was heard in the pulmonary region, downward to the fourth left interspace and outward to the mitral area; but best heard in the pulmonary area; not heard in the upright osition. No hum was heard over the vessels of the neck or over the thyroid gland. The abdomen was normal to palpation. There was no pain over bladder region or in the iliac fossæ. Examination of the back showed prominence of the spines of the third, fourth and fifth lumbar vertebræ, with marked tenderness on moderate pressure over them; no tenderness elsewhere. No areas of anesthesia were demonstrable.

* Read at the meeting of the Philadelphia Pediatric Society, November 13, 1906.

Hyperesthesia was present both on August 8 and August 22, the slightest touch with finger or pin causing pain over the coccyx and gluteal regions above the gluteal fold, extending upward along the posterior axillary line to the seventh rib, around which it passes to the midclavicular line, from there dropping to the costal margin and crossing to the opposite side. The entire abdomen was hyperesthetic and down the thigh to six inches below the anterior iliac spine passing obliquely to the inner side of the thigh. The knee-jerks were found to be slightly more than normally active. There was no ankle clonus and the Babinski reflex was not present. The external genitals were normal. There was no vaginal discharge.

Later History.—The patient had five slight attacks between August 8 and August 16, and only one convulsion lasting five minutes on August 20, since that time she has had no return of the convulsions. On September 9, the third day of menstruation, she passed a uterine cast without any nervous disturbance or pain. On September 26 the patient showed marked change; her expression was brighter and she looked more intelligent; the headaches had almost disappeared; she complained of no more backache or pain in the extremities; all areas of hyperesthesia had disappeared, and there was no pain on moderate or firm pressure over the lumbar vertebræ. Knee-jerks normal.

Treatment.—This has been entirely hygienic, the only drugs used being veronal and syrup of the iodid of iron combined with syrup of hypophosphites. The veronal was given in five grain doses for three days when it was discontinued owing to the deep sleep with stertorous breathing which occurred within half an hour after taking. General measures employed have been a strict attention to diet, with the elimination of meats, to a great extent, all highly seasoned food, stimulants, tea, coffee, sweets, and fried food. Only three meals daily have been allowed, the evening one composed of cereal, milk, bread and butter and stewed fruit. The patient is put to bed at 8 o'clock every night and takes a rest during the day. She lives an outdoor life as far as possible and has plenty of fresh air in her room at night. In the morning on awakening she is given an alternate hot and cold spinal douche, put back to bed for half an hour and then given a friction rub along the spine with cold cream for twenty minutes.

A report received November 13 states that the patient has just passed her third menstrual period without any return of the convulsive attacks or any nervous manifestation.

It is to be noted that heredity bears no relation to the etiology of this case. This is contrary to emphasized observations of Mills, Sachs, Saint-Philippe and others, who have found it most frequently in the children of degenerate parents. It seems that the spinal injury has been a factor in the cause of the disease, while undoubtedly the nervous strain attendant on the religious ceremonies precipitated the first acute manifestation. Had the first menstrual period followed closely on the seizure, it would have been regarded as a contributing cause, but the fact that it did not occur until 8 months after seems to eliminate this presumption.

Of the specific epileptic symptoms we have: unconsciousness, no distinct cause for each attack, the sudden onset, brevity of some attacks, and after the cessation of movements the occasional stupor or somnolence. In contradistinction there are the following purely hysterical manifestations: no aura preceding the attack, but occasionally some emotional excitement being the direct cause; noises of various sorts being made during the attack; no impairment of vesical and rectal reflexes; no biting of the tongue; and the rapid regaining of consciousness after cessation of clonic movements.

216 South Twentieth Street.

Chloroform in Labor.—W. Gillespie, in the Cincinnati *Lancet-Clinic*, states that there is a positive element of danger in the administration of chloroform after labor as it increases the chances of postpartum hemorrhage.

THE BENEDICT MODIFICATION OF THE BOAS TEST FOR OCCULT BLOOD IN THE FECES.

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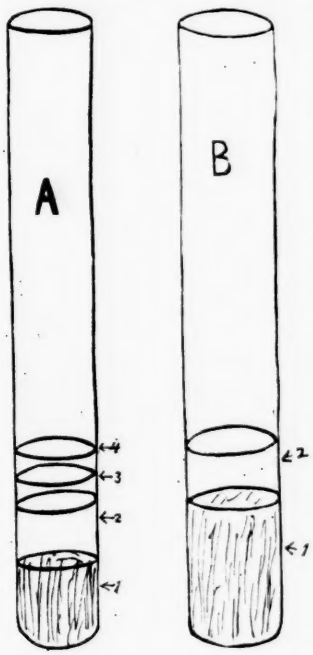
This method was presented by title to the 1906 meeting of the Medical Society of the State of New York and published in the *New York State Journal of Medicine*, May, 1906. So many inquiries have been received regarding the test that it may be pardonable to repeat the substance of the original paper in diagrammatic form. The test is, of course, the same in principle as the original Boas test, which likewise is merely an adaptation to feces of the time-honored guaiac test for hemoglobin. The present modification avoids the delay and spurting of feces incident to extraction of fats which are inevitable when gasoline is not used. It seems to me neither more nor less delicate than the original Boas test. The guaiac test is not especially sensitive and nearly 10 per cent. of blood must be present in the feces



A.—Diagram showing the order and approximate quantity of ingredients of the test for occult blood. 1. Feces reduced if necessary to diarrheal consistency by addition of water. 2. Gasoline, which rises above Nos. 3 and 4 as they are added. 3. Fresh tincture of guaiac. 4. C. P. turpentine, exposed to air for from 4 to 8 weeks until greenish-yellow in color.

B.—Diagram showing the result after the test tube has been shaken and allowed to stand for a minute or two. 1. Emulsion of feces, guaiac and turpentine. 2. Gasoline ring colored greenish or bluish according to amount of hemoglobin.

THE PERCENTAGE INDEX VERSUS THE BACILLARY INDEX IN THE ESTIMATION OF THE OPSONINS.

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In a previous communication[1] I have drawn attention to certain fallacies which attach to Wright's method of estimating the opsonic content of the blood, and have shown that more accurate results can be obtained by estimating the percentage of phagocyting leucocytes. By comparing the figure thus obtained with the figure corresponding to a specimen of pooled normal blood serum, terming the latter value 1, an index is obtained which is directly comparable to Wright's index. For routine work this method will be found more convenient than Wright's method of counting the organisms pro leucocyte and comparing the resulting figure with the corresponding one obtained with normal blood.

If for any reason, however, Wright's method is to be used, I should recommend that the percentage index be calculated at the same time; it will be found a useful check on the former and readily shows up errors that may have been made in counting, depending on clumping of the organisms, etc. As the percentage of phagocyting

1. Jour. Exper. Med., viii, page 651.

cells is to a certain extent dependent on the number of organisms present, it is advantageous to work with an emulsion which, with normal blood serum, should not give a higher percentage than 50. This will allow for an increase of the index in the patient's blood to at least 2, which is sufficient for all practical purposes.

I have also shown that, working with non-diluted blood serum, neither the phagocytic index (number of organisms pro cell), nor the percentage value of phagocyting leucocytes gives an adequate idea in all cases of the amount of opsonin present, if we are willing to admit that the amount is greater, the more the serum can be diluted, without extinction of phagocytosis (corresponding to the usual method of estimating the amount of agglutinins). For this reason I suggest that the usual determinations (by percentage index) be controlled by corresponding examinations of the blood in dilutions of 1:20 or even 1:40.

1302 Madison Avenue.

CASE OF GASTRIC AND OMENTAL HERNIA.

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Mrs. S., widow, aged 63, with negative family and personal history, had, in years past, performed the usual duties of a housewife, and in addition served as farm helper during the harvest season. At the age of 36, in an attempt to lift a heavy forkful of hay on a wagon, she was suddenly stricken with excruciating pain in the middle of the epigastric region and immediately fell to the ground unconscious. She soon recovered, but felt as if she "had been torn to pieces." The pain and weakness persisted for several days and no medical advice was sought. At variable intervals the pain was felt, but on lying down and having hot applications applied to that region the attacks seemed to be aborted.

This state of affairs continued for several years and apparently grew no worse. About five years ago, however, she experienced a severe spell, similar to the first, but accompanied with retching and straining, vomiting of bile and some blood. A physician was called and pronounced the trouble hepatic calculi.

From that time her condition did not improve and she was advised to have the stones removed. She did not give her consent until September 15 last, when after a more severe and prolonged attack than usual, she called for my services and was taken to Our Lady of Lourdes Hospital, where I performed a laparotomy two days later. I had confidently corroborated the previous diagnosis and was very much surprised to find the liver, gall bladder and duct, not only normal in every respect, but without hyperemia or any adhesions. An attempt to bring the stomach into the field was then made and met with failure, as many adhesions were noted at the pylorus, and on making tension at this point the organ appeared to be firmly adherent below and to the left. The incision was then prolonged in an elliptical and upward, as well as in an inward, direction, and, in sweeping the finger snugly up and immediately beneath the parietal peritoneum, I was surprised to find that neither the stomach nor any adhesions were encountered.

Grasping the gastric pouch firmly at its upper margin and making traction in an upward direction, I easily brought into view the stomach and the greater omentum, the latter being folded and refolded on itself. A distinct rent was found, with pouching of the peritoneum; into this the stomach had escaped, drawing with it the omentum. The stomach was freed from many adhesions, the omentum removed *en masse* and the laceration of several inches of the peritoneum repaired.

Recovery was uneventful, the patient returning home on the seventeenth day. A letter from her dated November 20 says: "I am entirely free from pain and have been ever since the operation. My appetite is good, I have not vomited and have gained 25 pounds."

NASAL SCISSORS FOR OPERATING ON THE MIDDLE TURBINATE.

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ALLEGHENY, PA.

In the treatment of nasal hypertrophies, it not infrequently is found advisable to remove a portion or all of the middle turbinate, either to restore free nasal respiration or to obtain unobstructed sinus drainage. To accomplish this, I have found the instruments usually employed defective, as they are apt to damage the openings into the ethmoidal cells, thereby interfering with their proper drainage.

Seeing the advantage of an instrument with which a portion or all of the turbinate may be removed by a clean section through all the tissues—mucous membrane and bone—I have devised the shears herewith illustrated. The shaft and handles are placed at such an angle as not

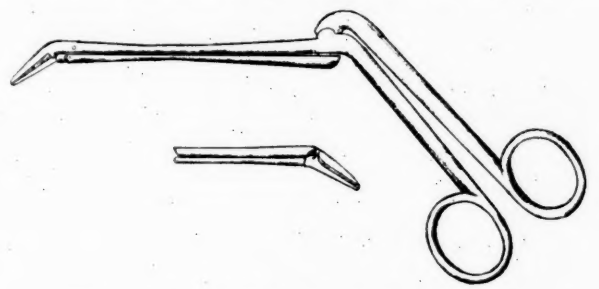

Fig. 1.—View of both sides of scissors closed.

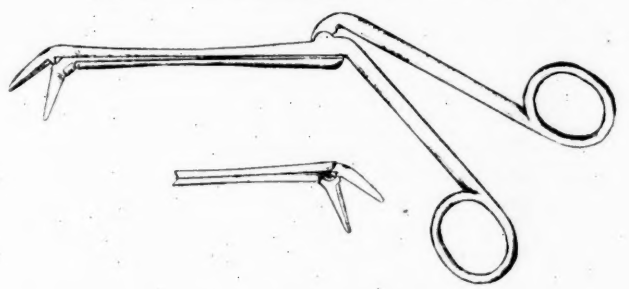

Fig 2.—View of both sides of scissors open.

to interfere with observation, while the shears are placed at the angle best adapted to follow the line of attachment of the middle turbinate.

I have used these shears for some time, the operations being done quickly and without pain or excessive hemorrhage under local anesthesia. The cut being clean with no injury to adjacent parts, the wound heals promptly, with complete renewal of mucous membrane, consequently with a minimum of cicatricial or scar tissue.

Railroad Accidents.—The slaughter on American railroads is terrific and terrifying. In our happy-go-lucky way of running railroads not much regard is paid to protection of human lives if it interferes with the economy of management, says the *Medical Times*. We hold human life too cheap in this country; we read with no sense of responsibility of these railroad accidents and we thank our good fortune that we escaped, but this is a problem which should interest even the most selfish individual, for he will never know when he stands in its shadow. This slaughter is of to-day. It did not occur in ancient Rome or in the Middle Ages, but is going on now.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 51.*)

TRIPHENIN.

PROPIONYL-PHENETIDIN.

Triphenin, $C_6H_4(OC_2H_5)NH(CH_3CH_2CO) = C_{11}H_{16}NO_2$, is a derivative of paraphenetidin, differing from acetphenetidin (phenacetin), $C_6H_4(OC_2H_5)NH(CH_3CO)$, in that the acetic acid residue, $(CH_3.CO)$, has been replaced by the propanoic acid residue, $(CH_3.CH_2.CO)$.

It is prepared by heating paraphenetidin with propanoic acid and crystallizing the product.

It is a white, shining, crystalline powder, melting at 120° C. (248° F.), odorless and faintly bitter. It is practically insoluble in water, requiring 2,000 parts, but soluble in alcohol and in ether.

In general it responds to the pharmacopoeial tests for acetphenetidin (phenacetin). From this it may be distinguished by its melting point and by identifying the propanoic acid evolved when heated with 50 per cent. sulphuric acid.

Its incompatibilities are those of acetphenetidin (phenacetin).

Actions and Uses.—Triphenin is antipyretic, analgesic and hypnotic; its action is slower and milder than that of phenacetin, because it is less soluble, and it is said to be free from by- or after-effects.

It has been recommended in typhoid, pneumonia, pleurisy, influenza, erysipelas and tuberculosis; also in neuralgia, sciatica, migraine, tabetic pains, etc.

Dosage.—As an antipyretic, 0.25 to 0.6 Gm. (4 to 10 grains); as an antineuralgic, 1 to 1.3 Gm. (15 to 20 grains), preferably in wafers.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 535,846. U. S. trademark.

TROPACOCAINE HYDROCHLORIDE.

BENZOYLPSEUDOTROPEINE HYDROCHLORIDE. TROPEINE.

Tropacocaine hydrochloride, $C_8H_{14}NO(C_7H_5O).HCl = C_{15}H_{19}NO_2.HCl$, is the hydrochloride of synthetic tropacocaine.

Pseudotropin-Lieberman is obtained from tropinon or from tropin by electrolytic reduction and from this the benzoyl derivative is obtained and this is converted to the hydrochloride.

It forms colorless, needle shaped crystals, melting at 271° C. (519.8° F.). It is readily soluble in water, and its solution keeps well for several months. Heated in the presence of hydrochloric acid it is split into benzoic acid and tropine.

Its incompatibilities are the same as those of the alkaloids in general.

Actions and Uses.—Tropacocaine hydrochloride is a local anesthetic, resembling cocaine very closely in its general action, but only half as poisonous. It is reported that anesthesia sets in more rapidly and lasts longer than with cocaine. It produces less dilatation of the pupil, sometimes none at all.

It is recommended as a local anesthetic.

Dosage.—It is applied in 3 to 10 per cent. aqueous solutions containing 0.6 per cent. sodium chloride.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 628,293.

TUMENOL.

TUMENOL VENALE.

Tumenol is a crude mixture of tumenol sulphone and tumenol sulphonic acid derived from bituminous shale.

It is prepared by sulphonating the mineral oil obtained by the distillation of bituminous shale quarried in the Mossel mine.

It is a dark oil of syrupy consistency, almost insoluble in water, but easily soluble in fats.

Actions and Uses.—It is said to be a non-toxic and non-irritant protective and palliative to the skin.

It is recommended in eczema, excoriations, erosions, superficial ulcerations and burns as a palliative and protective covering, etc.

Dosage.—As 5 to 20 per cent. ointment or 10 per cent. solution in water or glycerin and in the form of soap plaster (with salicylic acid).

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patent No. 56,401.

TUMENOL SULPHONE.

TUMENOL OIL.

Tumenol sulphone is a mixture of the sulphonated constituents of tumenol venale which are non-combinable with alkali.

It is prepared by treating tumenol venale with sodium hydroxide solution, extracting the alkaline mixture with ether, and distilling the ether from the solution obtained.

It is a dark-colored, thick, oily fluid, insoluble in water, but easily soluble in ether, petroleum, benzin, etc.

Actions and Uses.—These are described under Tumenol, which see.

Dosage.—It is used undiluted for pencillings on squamous and vesiculose eczemas.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

TUMENOL SULPHONIC ACID.

TUMENOL POWDER.

Tumenol sulphonic acid consists of the sulphonated constituents of tumenol venale, capable of combining with caustic alkalies.

It is prepared by treating tumenol venale with sodium hydroxide solution, shaking out the mixture with ether, decomposing the residual sodium compound with hydrochloric acid, and collecting and drying the precipitate.

It is a dark-colored powder, sparingly soluble in cold water, but readily soluble in hot water and in dilute ammonia water.

The aqueous solution should not turn Congo paper blue. When acidified with hydrochloric acid and filtered, the filtrate should give no reaction with barium chloride, nor should the aqueous solution (1 to 20), acidified with nitric acid and filtered, become more than opalescent on the addition of silver nitrate.

Actions and Uses.—See Tumenol.

Dosage.—It is used in substance, finely powdered, as a 5 to 10 per cent. paste with or without zinc oxide, and in 2 to 5 per cent. aqueous solutions as fomentations.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

(*To be continued.*)

Influence of Baths on Temperature in Typhoid as Aid to Prognosis.—The *Bulletin de la Soc. Méd. d. Hôp. de Paris* for November 23 states that Marchand's experience indicates that a drop in the peripheral temperature after a cold bath in typhoid is a bad sign. Marchand ordered fifteen-minute baths at 26 C. (78 F.), in treatment of a number of typhoid patients during a recent epidemic. The temperature in the axilla was determined in every case before and after the bath. It was found that in every case terminating in recovery the temperature in the axilla was only slightly lower after the bath than before, merely by a few tenths of a degree Centigrade; it was even higher than before the bath in a few patients. In the unfavorable cases, on the other hand, the temperature in the axilla was lower by one or two degrees than before the bath, and in one instance it was 3.1 degrees lower. He ascribes the lower temperature to weakness of the heart, requiring energetic measures to modify its unfavorable significance.

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SATURDAY, JANUARY 12, 1907.

FANTASTIC THEORIES OF THE CAUSE OF APPENDICITIS.

It would be strange if a disease which is so widespread and so well known among the laity as appendicitis should have escaped the notice of the daily press. In fact, it has been of late years a frequent topic of discussion, and only recently the newspapers were commenting on an article which appeared in the London *Lancet* suggesting a connection between appendicitis and the prevalent use of boric acid as a food preservative. The article admitted that little had been shown beyond the fact that the use of boric acid and the increase in appendicitis had occurred during the same period, and that boric acid in exceptionally large quantities could cause a condition favorable to appendicitis.

More recently we have received a little brochure[1] by F. A. Pond, M.R.C.S., L.R.C.P., entitled "Is Red Antimonial Rubber the Cause of Appendicitis?" In this pamphlet the author attempts to prove that appendicitis is frequently the result of chronic antimony poisoning, the antimony being derived from the red rubber that is used in the rings about the stoppers of beer and soda-water bottles. Although it is shown in his own paper that subjecting red rubber containing 16 per cent. of penta-sulphid of antimony to beer and carbonated water over a period of days will not cause a solution of the antimony, the author persists in his view that people who indulge in these drinks suffer from chronic antimonial poisoning due to the swallowing of small particles of detached rubber. His main argument, as was the case with the advocate of boric acid poisoning, is that there has been a marked increase in the incidence of appendicitis in late years, and that this has gone hand in hand with the increase in the use of red rubber on bottles used for beverages.

The late Sir William Gull had a saying to the effect that "savages explain, science investigates." A desire to explain all sorts of phenomena, natural and otherwise, seems to be an inherent human trait, but physicians are supposed to be not only human but also scientific. Their natural desire to explain should be tempered with a spirit of investigation, but the latter is sometimes very feebly developed. The two theories propounded above are both founded on the same premises. Both authors believe that appendicitis has increased in incidence in recent years, and each author claims his particular poison as the cause of the phenomenon because its increase has been synchronous with the increase of the disease. As we recently pointed out, the supposed increase in the incidence of appendicitis is far from being proved, and even if it is granted that appendicitis is increasing in frequency the fact that the use of borated food or of red rubber rings is also on the increase would not indicate any necessary connection between the two. It is unlikely that any one will claim that the general use of the telephone has aught to do with appendicitis, yet it has occurred during the same period in which the recognition of appendicitis has become common.

We are moved to observe that a great deal of nonsense has been written on the causation of appendicitis in the last ten or twelve years. Many theories have been brought forward, and their short existence has usually been an accurate indication of their value. We need but recall the foreign-body theory in its exaggerated form (a very small percentage of cases are, of course, due to foreign bodies) which led to the wholesale eschewal by the faddists and the phobiacs of grapes, small fruits and cherries, and even caused suspicion to be cast on the homely but useful toothbrush. Then there was the rheumatic theory which compared the appendix to the tonsil, and the influenza theory which assumed an increase in appendicitis going hand in hand with a similar increase in influenza. There have been other theories just as fantastic, but less popular. It would be well if the theorists kept in mind the aphorism mentioned above: "savages explain, science investigates."

1. Pond, (F. A.): Liverpool: Edward Howell, Church Street, 1906.

THE FOOD VALUE OF VEGETABLE "GELATINS."

The use of jellies derived from lichens and marine algæ has been much less extensive in America than in many other countries; in Japan especially they form a staple article of diet. Iceland moss and Irish moss are occasionally employed in this country, and at one time they had a decided reputation as being suitable for the use of invalids and convalescents. With the vegetarians vegetable gelatins have occupied a prominent place among the substitutes for animal food. The clear moss jellies which "do not reek of the stockyards and the abbatoir" have been so highly extolled for their supposedly great nutritive value, as well as for their esthetic advantage, that some such "vegetable gelatins" have found a considerable sale.

The view that these vegetable jellies are highly nutritious seems to have passed almost unchallenged, the chemical investigations which have been made having been generally inadequate and, as is often the case, quite misleading. We are too much accustomed to rate the nutritive value of a food substance by its percentage composition of carbon, hydrogen and nitrogen, without considering the availability of these constituents for

human metabolism. A substance may be edible and have a high nitrogen content, yet this by no means proves that the nitrogen is in the form of proteid or that it can be utilized in place of proteid nitrogen. Perhaps the best example of this fact is afforded by mushrooms. Early analyses of foodstuffs sought particularly to ascertain the amount of nitrogen present, for, under the influence of Liebig's teaching, only nitrogenous foods were considered of value; and so when it was found that edible mushrooms contained a good proportion of this element they were given a high place among foods. Yet the more recent investigations of Mendel[1] showed that the nitrogen of mushrooms is chiefly in a non-proteid form, which can not be utilized by the animal organism.

The same is true of the vegetable jellies. Analysis shows them to be carbohydrates, and on decomposition with acids they yield sugars, such as glucose, levulose and pentose. But this is no proof of dietetic value; for example, cellulose is also a carbohydrate which yields glucose on cleavage, yet it has practically no food value in the human economy because of the absence in the gastrointestinal tract of enzymes capable of breaking down the cellulose molecule into utilizable sugars. A study of the nutritive value of the vegetable jellies has recently been made, under the direction of Prof. Mendel, by T. Saiki,[2] and he has shown them to occupy much the same place as cellulose among the foodstuffs. The jellies studied were Iceland moss, Irish moss and the Japanese jellies kombu, wakame and nori, as well as the familiar agar-agar of the bacteriologic laboratory. None of these substances is affected in the least by saliva, intestinal juice or pancreatic juice, and they are not affected by colon bacilli which might possibly break down carbohydrates that the digestive juice can not attack.

As was to be expected from the results of the laboratory experiments, it was found that these substances when given in the food either of man or animals could be recovered unchanged in the feces. On account of their marked property of holding large quantities of water, relatively small quantities of vegetable jellies cause the elimination of copious watery feces. As they form agreeable articles of diet when used like gelatin as a vehicle for fruit juices and other flavors, it is suggested that agar-agar or the moss jellies may be of value in certain cases of constipation.[3]

Concerning their value as a food, therefore, the most that can be said for the lichen and algæ jellies is that they are harmless, but non-nutritious. They may be used as a thickening for soups or as a basis for jellies when, for any reason, animal gelatin is not desired. It is interesting to compare these facts with the statements made by the promoters of "vegetable gelatins." For example, printed on every box of a certain preparation of this kind, which comes from the Michigan headquarters of health "foods," is the statement: "Its food value is more than double that of an equal weight of eggs or beefsteak." This particular preparation is simply agar-agar in a form recognizable by anyone familiar with the bacteriologic laboratory, and just about as nutritious as a corresponding quantity of newspaper pulp, although far more edible.

1. Amer. Jour. of Physiology, 1896, vol. I, p. 225.
2. Jour. of Biol. Chem., 1906, vol. II, p. 251
3. A similar suggestion has been made by Schmidt (Münch. med. Wochschr., 1905, p. 1970), without, however, experimental evidence.

EDGE TOOLS.

In discussing the reported presence of a large number of cases of a gastric form of influenza in London, an editorial writer in the New York *Herald,* December 31, ventures to outline the treatment for this form of the disease. His suggestions include the use of certain drugs, some of which are extremely depressing, and yet he gives not only the names, but the doses that should be used. This is the sort of editorial that is likely to be widely copied. With what can not but seem imprudence, considering the serious character of the malady he is discussing, the editorial writer says:

"Antipyrin and pyramidon are also much used. In a general way pyramidon is preferable to antipyrin, the latter being too depressing in its action. The best thing to do in those forms in which the fever rises a great deal is to take, once or twice a day, thirty centigrams of bichlorhydrate of quinin. This association of medicines, in addition to the fact that it greatly diminishes severe headache and the sensation of an aching lassitude in the limbs which is felt when one has influenza, causes abundant perspirations which facilitate an elimination of poisons and diminish the duration of the illness."

It is unnecessary to say that such an editorial is likely to do much harm and it is surprising that the writer, who is evidently a physician, did not realize this. The drugs advised are not simple remedies of which it may be said, in popular parlance, that if they do no good at least they can do no harm. On the contrary, they are examples of the most depressing coal-tar products which should always be taken with due caution since they have proved to be extremely dangerous drugs. There is a definite conviction in the minds of most physicians that these drugs have been the cause of a number of fatal terminations in influenza which would not otherwise have occurred. They are recommended as if they were curative. Any such idea is, of course, contrary to our knowledge of their effects. The only reason for their administration ordinarily is that they lessen the fever and thus make the patient more comfortable. They are given as the lesser of two evils; often the physician concludes that it is better to have a depressed than a restless patient. On the influenza itself they have no effect, unless, indeed, the depression produced by them should lower resistive vitality and so make the patient less able to throw off the infection, which would, therefore,

run a more chronic and exhausting course. The physician must judge in each case just how far the use of these drugs may be permitted.

Just what the quinin is recommended for is not clear. Those who think that quinin is a direct antipyretic are growing fewer every year. Quinin reduces fever in malaria, but does so by its action on the plasmodium. It was formerly recommended for fevers generally in the hope that it would affect them favorably as it does malaria, but this was before its antiplasmodial action was known. Quinin is only a reasonably good tonic and is no more directly curative than would be any other tonic of corresponding properties. With the stomach already irritated by the influenzal process it is almost sure to do more harm than good.

Most people who read the editorial in question will receive the impression that when influenza with stomach symptoms occurs all that is necessary is to procure some pyramidon and quinin and to take them in the doses advised. As a matter of fact, no case of influenza is ever so simple as this. It is the patient who must be treated and not the disease. Every individual responds differently to the invasion of the influenza bacillus and many affections that are called influenza are really manifestations of other pathologic conditions with which "colds" happen to be associated. It has become more and more clear in recent years that many supposed stomach symptoms have their origin in heart trouble. Indiscretions of diet when combined with the disturbed circulation of the stomach wall consequent on a weak or diseased heart are almost sure to give severe gastric symptoms. The administration of such drugs as antipyrin and pyramidon in these cases would be eminently improper. Doubtless many persons will consider themselves justified in taking these remedies themselves and others will dare to give them to friends, and if they do there will be many more death certificates to be signed than would otherwise have been the case. Gastric influenza is not so easily diagnosed, and to diagnose it and to exclude affections of other organs will require the skill of the most expert of physicians.

DR. GRENFELL OF LABRADOR.

When we referred,[1] not long ago, to the excellent work being done in Labrador by Dr. Wilfred Grenfell, we spoke with pleased anticipation of his expected visit to the United States. An interesting summary of some of the medical aspects of his work is given elsewhere in this issue,[2] in the report of Dr. Grenfell's address before the New York Academy of Medicine. Our profession and the public are now tolerably familiar with his work, but it would greatly aid one to grasp its significance if one might see and hear this simple, prayerful, achieving man. These traits are correlated with regard to all notable personalities. For the strong man is invariably the simple man, and there is practically no task for which the praying man is not potential; even the angry and tempestuous elements find such an one invincible. The inspiration of such a personality is of benefit to all who come under its influence. It is certainly gratifying that the profession of our country, and the public as well, have taken such an interest in him and his work.

1. THE JOURNAL A. M. A., Oct. 20, 1906, p. 1306.
2. General News: Infection in Labrador, p. 149.

THE TRADING-STAMP SYSTEM IN MEDICINE.

The physician who is looking for dishonest ways of making a living, like the one who is seeking a gold brick, only finds it necessary to glance through his mail to obtain what he covets. In an instance before us, both types are appealed to. The Converse Chemical Company of St. Louis, in a form letter, after calling attention to the fact that "our complete and exact formula is printed on every bottle," goes on to make the following proposition: "If you . . . will agree to use our preparations where indicated . . . we will sell you some stock at a price that will be attractive." On further inquiry we find that the company is even more liberal than its letter indicates, for in a later epistle—printed this time—they propose to give the stock away. "For every bottle of either one of our preparations you purchase for $1.00 per bottle delivered to you, we will give you one share of stock in our company, which has a par value of $10.00 per share." (sic) To prevent any avaricious physician from buying up the entire plant they put in a proviso that each individual is limited to 100 shares and state that they have only 5,000 shares of stock for this purpose. The pathos of the whole business is that a class of men, of presumably superior intelligence and high ideals, can be caught on a proposition of this kind. But evidently many are. We have always felt a degree of pity for the poor dupes who buy their groceries where they get a "chromo" with every pound of tea, but what shall we say of physicians who will allow themselves to be caught by such a bait as that offered by this St. Louis concern. The company evidently realizes that some of those who swallow the bait may have a vestige of self-respect left, for it offers to "have the stock put in the name of any member of your family," and promises not to divulge the names of its stockholders. The whole scheme of course is to get physicians financially interested in the preparations so that they will prescribe them, recommend them, and, in short, use and advertise them purely from the viewpoint of the almighty dollar. No man's judgment is likely to remain unbiased and impartial where his pocket-book is concerned—it is not human nature; no physician can have an eye single to his patient's best interests if he is to receive financial benefit by prescribing one remedy rather than another. What kind of a decision would be expected of a judge who himself was financially interested in the suit he is called on to decide? The case is parallel except that with the judge the decision affects only dollars and cents; with the physician it concerns the health, even the life sometimes, of a human being. No casuistic reasoning can change the fact that it is wrong in principle and vicious in practice for physicians to participate in the profits accruing from the exploitation of particular remedies.

THE ALLEGED DECREASING LONGEVITY.

An item is going the round of the newspapers based on certain statistics found in the United States Census of 1900, in which it is inferred that human longevity in this country is becoming impaired owing to the lack of the "simple life" in our modern civilization. Because the death rate in persons above 60, and especially in those over 70, has apparently increased, the magazine and newspaper writers see a national deterioration, and to use the language of one of them, the figures show that, "notwithstanding improved medical knowledge and the benefits of modern sanitation, we are dying earlier than our grandparents did." The reason advanced for this state of affairs is that our life is more complex and luxurious than was that of our forbears. Allowing for deficiencies in the earlier censuses and the still imperfect registration methods over a large portion of our country, there is nothing particularly alarming in the fact that our later figures show an increased rate of mortality in individuals over 60 years of age, and it should not of itself require an explanation to medical men. It would seem, however, that the conditions are not thoroughly appreciated by all, since a German physician is reported to have made a rather disadvantageous comparison between German and American longevity based on the same line of argument. It is admitted that the general average of human life has increased and infant mortality particularly has diminished, being lower in this country at the present time than in any of the principal industrial countries except, perhaps, France. The survival of so many infants naturally increases the death rate in later ages, and that this increase can be put off till after the active period of life is past is a very favorable showing for medical science. Under the older conditions it took an originally robust constitution to survive the perils of infancy and middle age, and therefore there were perhaps more of these specially endowed individuals to survive at more advanced ages, and the ratio of persons past the age of efficient work might be somewhat greater. It is not necessary to emphasize the economic value of the saving of human life during the working period. There is a hope, and not an unreasonable one, that sanitary science may enable us still further to increase the average longevity, but it would be rash to say that there is any immediate prospect of increasing it beyond the Scriptural limits of three score and ten, and, only exceptionally, four score. The simple life, however desirable, is not in sight, and patriarchal longevity still less so.

"OPERATED."

Concerning the careless use of certain words, such as "ease," "no temperature," etc., letters pro and con recently appeared in THE JOURNAL. Another word should be mentioned, and if the new way of using it is to be accepted as correct, then it should be so understood. We refer to the word "operate." This word is both transitive and intransitive. We may operate a mine or a linotype machine, but we do not usually "operate" a patient. The verb "to operate" (*operari*, to work, and *opus*, work) has the same meaning as the verb "to work" and is used in the same way. It is a creditable thing "to work" a mine, and once in a while it is paying business; "to work" a linotype machine is not the hardest nor the least paying trade, and is an honorable calling. But "to work" a patient! That, however remunerative, is certainly not an honorable thing to do. Yet it is what some surgeons are doing every day—or at least what they say they are doing. When a surgeon says he "operated a patient" he does not want to be taken literally; he does not mean to have us infer that he "worked a patient." He may operate a manikin or a skeleton to demonstrate a point, and in a like manner he may operate a man, using the man as he would use a manikin or a skeleton. Those who a year or two ago were using "operate" as a transitive verb are now making it serve as an adjective and telling us about "operated" patients. Some one has said that "there is a misuse of words which can be justified by no authority however great, by no usage however general."

Medical News

DISTRICT OF COLUMBIA.

Personal.—Dr. J. Ford Thompson, who recently underwent a serious operation in London, has returned to his home in Washington greatly improved in health.——As the result of a competititve examination, Dr. William R. Dear has been made a member of the resident staff of the Emergency Hospital. Dr. Glenn Jones has resigned his position on the staff and will enter private practice in Washington.——Dr. James C. McGuire suffered a dislocation of the elbow and several fingers, and severe scalp wounds while attempting to board a car, December 24.

Field Crematories for Excreta.—A new form of incinerator for the disposal of excreta of troops in the field, invented by James S. McCall, Huntingdon, Tenn., has been given a thorough trial in the Army under service conditions during the past year, and has been approved by the medical department of the Army. The feces are received directly into pans which are suspended over the firebox. When the pans are full the fires are started, and after the cremation of the contents is completed the urine, which has been received separately, in a fly-proof receptacle, is admitted to the pans through a pipe supplied with a valve, and quickly evaporated. A second fire at the base of the smokestack consumes the smoke and fumes, so that the operation is practically odorless. This device, it is hoped, may solve the heretofore vexed question of the disposal of excreta in camps not provided with sewage facilities.

ILLINOIS.

Resolutions of Respect.—The Wabash County Medical Society, at its recent meeting, passed resolutions laudatory of the late Dr. Jacob Schneck, Mount Carmel, and expressive of sorrow at his death.

Psychopathologist to be Appointed.—An examination will be held in Chicago, January 22, under the direction of the Civil Service Commission, by a board of examiners composed of Drs. Hugh T. Patrick and W. A. Evans, Chicago, and Dr. Vaclav H. Podstata, Elgin, to select a psychopathologist for the Cook County Insane Hospital, Dunning. The salary is fixed at $2,400, in addition to living expenses and an excellent opportunity for original research is furnished.

Communicable Diseases.—The epidemic of scarlet fever at De Kalb is believed to be checked, but as a precautionary measure the schools will remain closed for another week.——The village of Rossville and its vicinity are reported to be suffering from an epidemic of scarlet fever. All schools in the township are closed.——Dr. J. C. Westervelt, inspector for the State Board of Health, reports that the diphtheria situation in the southern and western part of Iroquois County is much improved.——Dr. E. F. Baker, inspector of the state board, reports that several deaths from scarlet fever have occurred in Knox County, due primarily to failure to observe the quarantine regulations.

Personal.—Dr. Frank Billings, Chicago, has been elected chairman of the consulting staff of Cook County Hospital,

vice Dr. Henrotin, deceased.——Dr. Constantine H. Murphy, Chesterfield, is reported to be seriously ill at his home.——Dr. Clinton Helm, dean of the medical profession at Rockford, announces that he will retire from active practice February 25, on the fifty-fifth anniversary of his graduation from the University of Iowa.——Dr. William A. Noyes, editor of the *Journal of the American Chemical Society*, and chief chemist of the bureau of standards at Washington, D. C., has accepted the position of professor of chemistry and director of the chemical laboratory in the University of Illinois, Urbana.——Drs. Jeremiah H. Stealy, Freeport, and Dr. D. Carson Smith, Stockton, had a narrow escape from drowning while crossing a frozen creek early on the morning of December 30.——Dr. Charles A. Allen, Virden, has returned from St. Louis, where he recently underwent operation.——Dr. and Mrs. S. M. Parker, Aviston, have gone to Redlands, Cal., to spend the winter.

Chicago.

December Deaths.—December, 1906, furnished the highest mortality rate of the decade, with two exceptions, as 2,678 deaths were reported. The five chief causes of death were: Pneumonia, 450; consumption, 264; heart disease, 227; violence (including suicide), 213, and Bright's disease, 202.

Fenger Memorial.—Plans for establishing a fund in memory of the late Dr. Christian Fenger, from which will be awarded annual cash prizes for original research in bacteriology, surgery and pathology, resulted on December 26 in the incorporation of the Fenger Memorial Association. The incorporators are Drs. Frank Billings, Ludwig Hektoen, Karl Doepfner, George W. Webster, Charles S. Bacon, William T. Belfield and John B. Murphy.

Chicago Deaths.—During the last week of 1906, 575 deaths were reported to the department of health, equivalent to an annual rate of 14.63 per 1,000. Of these deaths 101 were due to pneumonia, 59 to consumption, 51 to heart disease, and 37 to violence, including suicide.——During the week ended January 5 there was a great increase in mortality, the number being 673, as compared with 575 for the previous week and 562 for the corresponding week of 1906. This is equivalent to an annual rate per 1,000 of 16.65. Pneumonia caused 137 deaths; consumption, 63; violence (including suicide), 62; Bright's disease, 54, and heart disease, 47.

Deaths of the Year.—The total number of deaths from all causes in Chicago during 1906 was 29,048, an increase of 1,836 over the previous year, or 3.7 per cent., equivalent to an annual death rate per 1,000 of 14.18 and 13.67 respectively. The greatest number of deaths in the year was caused by pneumonia, with 4,047; consumption caused 3,222 deaths; acute intestinal diseases, 2,709; heart disease, 2,190; violence (including suicide), 2,174; Bright's disease, 2,129; cancer, 1,334; nervous diseases, 1,158. Diphtheria caused 549 deaths; scarlet fever, 493; typhoid fever, 370; whooping-cough, 167; measles, 128, and influenza, 118. No deaths from smallpox were reported during the year.

KENTUCKY.

Must Report Tuberculosis.—Dr. Maverell K. Allen, health officer of Louisville, threatens to issue warrants for the arrest of physicians who fail to report cases of tuberculosis to the health officer, as required by the city ordinance.

Tuberculosis Board Appointed.—The mayor of Louisville has appointed a board of ten trustees for the local Tuberculosis Hospital, which contains the following medical members: Drs. Thomas H. Baker, George S. Coon, Eugene Y. Johnson and Sidney J. Meyers. This board was appointed under "An act to provide for the establishment and maintenance in counties which contain a city of the first class of a hospital for the treatment of persons afflicted with tuberculosis." As the city is to build a tuberculosis hospital, the directors of the Kentucky Anti-tuberculosis Association have decided to abandon the idea of erecting a hospital for the present, and will devote the money which was raised for that purpose to the establishment of a free dispensary.

Personal.—Dr. John G. Puryear of Wingo had a narrow escape from drowning in a flooded creek recently. He lost his instruments and medicines.——Dr. Malcolm H. Yeaman, superintendent of the Central Kentucky Hospital for the Insane, Lakeland, has resigned, to take charge of the Beechhurst Sanitarium, near Louisville.——Dr. A. D. James, Penrod, recently elected a member of Congress, is reported to be seriously ill with pneumonia.——Dr. John D. Smith, Paducah, is reported to be critically ill at his home.——Dr. C. J. Walton, Munfordville, was thrown from his horse December 12 and seriously injured.——Dr. John W. Crenshaw, Versailles, has been made the first physician-in-chief of the Woodford County Hospital, and Dr. Samuel M. Worthington, alternate.——Dr. A. K. Purdy, Kuttawa, who was severely wounded several months ago, has fully recovered.——Dr. Joseph Halton, interne at the Speers Hospital at Dayton, has resigned, to accept the position of superintendent of a sanitarium at Sarasota, Fla.——Dr. Charles S. Helman, city physician of Ludlow, is reported to be seriously ill.——Dr. Edward L. Carpenter, Louisville, is reported to be seriously ill with rheumatism.

Crusade Against Criminal Physicians and Drunkards.—The State Board of Health, through its secretary, Dr. J. N. McCormack, has issued the following circular:

To the Medical Profession and People of Kentucky.—The infamous, practice of criminal abortion, infantile murder, to speak plainly, dangerous to the health and lives of women to an extent not generally realized, and a constant encouragement to immorality, has become so common in recent years, even with married women in the higher works of life, often church members and otherwise respectable, that the General Assembly has made it the solemn duty of the board to revoke the license to practice of any physician proved guilty of this horrible crime. After full consideration the board has decided to take up this work in a systematic way and to discharge the solemn duty imposed on it without fear or favor. In the very nature of things this is one of the most difficult of crimes to prove, and for this reason it has been decided earnestly to invoke the aid of the county medical societies, boards of health, court and other officials and the people. We promise to make a prompt investigation of every case reported to us, and to cite physicians, high or low, to appear before the board for trial whenever the evidence warrants it. We appeal to the medical profession in its organized capacity, and to all officials and good citizens, to aid us in the enforcement of this wise and timely law.

It is also made the duty of the board to revoke the license of any physician who becomes addicted to the liquor or drug habit to a degree which disqualifies him to practice with safety to the people. No drunkard or opium or cocain habitue is fit to practice a vocation where health and life are constantly dependent on acuteness of intellect or correctness of judgment. This is a mild offense compared with the cowardly murder involved in every criminal abortion, and this phase of the law will be used to secure reformation wherever this is possible. Copies of this letter will be sent to every newspaper, physician and official in Kentucky, and we ask the assistance of all good people in the work.

MASSACHUSETTS.

A Good Record.—Newton Hospital treated 90 cases of diphtheria and 79 of scarlet fever last year without a fatality.

Money for Hospital.—The Lawrence General Hospital is to receive $25,000 by the will of Helen G. Coburn under a decision recently rendered by Justice Morton.

Report of Diet Kitchen.—The South End diet kitchen, Boston, during 1906 distributed to 8,432 applicants, 9,898 quarts of milk, 18,877 eggs, 71 portions of beef tea and 162 portions of mutton broth. Each applicant gave about one cent a day or $98.60 toward the expenses which for the year amounted to $2,017.47.

Inspection of Minor Employés.—Last year the legislature passed a law requiring the medical inspection of schools. A further step in the same line is urged by the governor this year, namely, medical inspection of all minors engaged in industrial pursuits as is already in operation in England.

Labrador Missionary in Boston.—Dr. Wilfred T. Grenfell of the Labrador coast mission hospitals has been speaking frequently in regard to his work in and about Boston. Besides hospitals, he is trying to introduce among the people of Labrador various industrial and economic factors for their development.

Douglas' Good Work.—Ex-governor W. L. Douglas made a New Year's gift of $1,000 to start the work of a new organization in Brockton which is to combat tuberculosis. Moreover, he has posted in his factories advice regarding the first signs of consumption. The new society, whose president, Mrs. B. B. Russell, is a trustee of the Rutland Sanatorium, will assist poor consumptives with medical care and nursing, medicines, food, etc., and will specially promote modern home treatment similar to that obtained in sanatoria.

MICHIGAN.

Joint Membership.—By the joint action of the Wayne County Medical Society and the Defense League, Dec. 3, 1906, membership in the Wayne County Medical Society, beginning January 1, involves membership also in the Defense League. Previous to this year the Defense League was an independent organization composed of those members of the county society who paid, in addition to the dues of the county society, $5 per year for self-protection against the annoyance and expense of threatened and actual litigation in civil and malpractice suits. During the two years of its existence as an independent body 10 suits have been threatened against its members, but none brought to trial, thus corroborating the belief of the promoters of the league that such an organization of local physicians banded together for mutual protection, with a regularly re-

tained, efficient firm of attorneys, would frighten off most claimants and make the actual trial of a civil malpractice suit rare. At the close of 1906 the league had about 125 members and a substantial surplus in its treasury. To provide for the expense of protecting all its members, after merging the Defense League at the beginning of this year, the Wayne County Medical Society has raised its annual dues from $4 to $5. This pays for membership in the state and county societies and in the Defense League. No one can now be a member of the Wayne County Medical Society without being a member of the Defense League.

Do Honor to Herdman.—At the funeral of the late Dr. William J. Herdman, December 17, court was adjourned as a mark of respect to Dr. Herdman's memory. The medical faculty were present. Dr. J. Mills Gelson conducted the services and President Angell of the university delivered the first address.——A suggestion has been made by Dean Vaughan of the medical department, that the psychopathic hospital at Ann Arbor be named after the late Dr. William J. Herdman. Dr. Herdman was the chief promoter of the psychopathic hospital idea in the university, and founded and developed the department for the treatment of nervous diseases. The suggestion of Dean Vaughan would, therefore, seem to be timely.

NEW HAMPSHIRE.

Surgical Club Meeting.—At the eleventh annual meeting of the New Hampshire Surgical Club, held at the Mary Hitchcock Hospital, Hanover, the president, Dr. William T. Smith, Hanover, spoke on the requirements of specialized education and the increased qualifications for the practice of medicine and surgery, and urged the profession in its organized capacity to support with all possible interest the bill brought before Congress in its last session to increase the efficiency of the medical department of the Army. At the annual banquet Dr. Herbert L. Smith, Nashua, presided as toastmaster. Dr. Frank Blaisdell, Goffstown, was elected president; Dr. Nelson W. McMurphy, Gilmanton, vice-president, and Dr. George D. Owen, Manchester, secretary and treasurer.

NEW MEXICO.

Personal.—Dr. P. W. Kirkpatrick, Alamagordo, has been elected institute physician to the New Mexico Institute for the Blind.

Hospital Notes.—A contract has been awarded for a brick and stone building to cost $25,000, containing a power plant, laundry, heating and water plants for the St. Joseph's Sanitarium, Albuquerque.——A hospital has been established at Silver City, with nine rooms, open to the general public.——The Miners' Hospital, Albuquerque, built by the territorial government as a home for indigent miners, was opened as a hospital November 10, under the charge of Dr. T. B. Hart.

NEW YORK.

Harvey Society Lecture.—At the sixth lecture in the Harvey Society course, January 12, by Prof. Francis G. Benedict of Wesleyan University on "Metabolism During Fasting," Succi, the professional faster, who has been the subject of so many experiments on metabolism, will be present.

Personal.—Dr. Joseph B. Ringland, Oswego, has been appointed jail physician.——Dr. William B. Reid has been appointed chief of staff of the Rome City Hospital, vice Dr. Henry C. Sutton, resigned.——Dr. Paull R. Abell, Sidney, will take a trip this winter up the Amazon, returning by way of England.——Dr. Virgil C. Kinney, superintendent of the Wilsville Sanitarium, has started on a trip to the West Indies.

Wende Again Health Officer.—Dr. Earnest Wende began his third term of office as health commissioner of Buffalo, January 1, succeeding Dr. Walter D. Greene.——Dr. Francis C. Froneczak was appointed at the same time to succeed Dr. Edward Clark as assistant health commissioner.——Employés of the health department presented to the retiring health commissioner a handsome mahogany leather-upholstered rocking-chair as a parting remembrance.——Dr. Edward Clark, the retiring assistant health commissioner, was given a pair of diamond-studded cuff-buttons.

New York City.

Personal.—Dr. Allan McLane Hamilton arrived from Europe on the *Caronia*, December 30.——Drs. Henry G. Webster and Thomas A. McGoldrick of Brooklyn have been appointed police surgeons at a salary of $3,500 per annum.——Dr. Charles S. Benedict, on his retirement from the health department after 20 years of service in the division of contagious diseases, was presented a silver service by 30 of the men who had served in this department with him. Dr. Benedict did valuable service during the epidemics of cholera in 1889, of typhoid in 1891, and of smallpox in 1901.——At a meeting of the Berlin Laryngologic Society, December 13, Dr. Emil Mayer was elected corresponding fellow.——Dr. Frederick Albers, Auburn, ambulance physician at Kings County Hospital, Brooklyn, was thrown from an ambulance in a collision with a trolley car, December 13, and seriously injured.——Dr. Joseph H. Raymond, Brooklyn, is convalescent from his recent operation for appendicitis.

Cocain Habit Spreading.—Two youthful victims of the cocain habit were arraigned in one police court recently, charged with disorderly conduct due to the influence of cocain. This made four cases within a few days, and in three instances the mothers of the boys testified that they had second sons addicted to the same habit. The magistrates say that these cases are becoming more common in the police courts every year, especially in the "tenderloin" district. The growth of the habit is shown by the increased number of patients brought to Bellevue Hospital suffering from the habit, and only those in the last stages come there. The records of the hospital show that there were 13 cases of insanity and 9 cases of delirium from cocain poisoning. Dr. Gregory of the psychopathic ward is of the opinion that unless something is done to restrict the sale of the drug the time is approaching when as many patients will be sent to the hospitals suffering from the effects of cocain as now are sent there by alcohol.

Lectures on Insanity.—The Psychiatrical Society of New York has arranged a series of four lectures on problems of insanity, to be held under the auspices of the Academy of Medicine, at 17 West Forty-third Street, Saturdays, January 19, February 2, February 16 and March 2, at 8:30 p. m. The purpose is to put before the medical profession and others a program of work and facts for orientation with a view to the organization of a movement toward prophylaxis and the development of sound interests in this eminently important topic. The first lecture will be given by Dr. Adolf Meyer on "Modern Psychiatry, Its Possibilities and Opportunities;" the second, by Dr. August Hoch, on "The Manageable Causes of Insanity, Exclusive of Heredity;" the third by Dr. C. L. Dana on "The Data of Heredity and Their Application in Psychiatry," and the fourth lecture by Dr. Allan McLane Hamilton on "The Development of the Legal Regulations Concerning the Insane." The medical profession and others interested are cordially invited.

OHIO.

Physician Freed.—Dr. Alfred C. Ball, Alliance, who has been on trial at Canton for the alleged performance of an unlawful operation, was acquitted by the jury, December 24.

Academy Election.—At the annual meeting of the Columbus Academy of Medicine, December 18, the following officers were elected: Dr. William D. Deuschle, president; Dr. T. Alfred Fletcher, vice-president; Dr. Charles J. Shepard, secretary; Dr. Yeatman, censor, and Drs. John D. Dunham and Wells Teachnor, delegates to the state medical association.

Communicable Diseases.—Rossford reports 15 cases of typhoid fever.——In Cincinnati, 1,448 cases of typhoid fever have been reported since June 1.——Diphtheria has broken out afresh in Niles and an epidemic is feared.——The Windsor school, Walnut Hills, Cincinnati, has been closed and fumigated on account of diphtheria.——The city health department of Toledo reports measles prevalent in the city.

Personal.—Dr. John W. N. Vogt, Delaware, was thrown from his carriage December 12, dislocating his left shoulder.——Dr. John C. Martin, Findlay, who has been seriously ill with typhoid fever, has recovered.——Dr. John H. Ramy, Rock Camp, is reported convalescent from an attack of typhoid fever.——Dr. Henry K. Spooner is reported to be very ill at his home in Republic.——Dr. Charles Collins, Lima, is reported to be improving.——Dr. George M. Waters, Columbus, has returned from Vienna.——Dr. S. R. Klein, Columbus, has been made third assistant physician and pathologist of the State Hospital for the Insane at Clarinda, Iowa.——Dr. E. Bertram Holst, Rossford, is reported to be seriously ill with typhoid fever.——Dr. Thomas B. Norris, Alton, who has been seriously ill with pneumonia, is convalescent.——Dr. W. S. Patterson, Hillsboro, was stricken with paralysis, December 21.——Dr. Belle J. Allen, Bellefontaine, sailed for India January 11.

PENNSYLVANIA.

Hospital Saturday and Sunday.—At the annual meeting of the Hospital Saturday and Sunday Association of Pittsburg, receipts for the year of $8,156.76 and disbursements of $7,649.21 were reported.

Epidemic Diseases.—Rossiter, a mining town near Punxsutawney, is reported to have an epidemic of smallpox. A squad of state police is on duty to enforce quarantine.——Warren suffered from an epidemic of vomiting and diarrhea, on December 8, attributed by the physicians to the city water. One hundred and twenty acute cases were reported.——South Sharon reports at least 25 cases of diphtheria.

Appropriation for State Institutions.—The State Board of Charities has filed with Governor Pennypacker its recommendations of appropriations for the various institutions receiving state aid. It is understood that the state hospitals for the insane were recommended for largely increased appropriations, most of the increase being for buildings for the proper housing of patients and for nurses' quarters.

Personal.—Dr. Arthur F. Ash, Duke Center, has recovered from his recent illness.——Dr. Alice Rogers Early, Media, and her husband, sailed for Spain November 29.——Dr. Gilbert T. Smith, formerly assistant physician at the State Hospital for the Insane, Danville, has been appointed assistant medical superintendent of a sanitarium at Stamford, Conn.——Dr. Gustav T. Fox, Bath, has returned from Europe.——Dr. and Mrs. Martin J. Sweeney, Kane, are taking a trip to the Pacific Coast.——Dr. Cornelius Bartholomew, Allentown, was assaulted in his office by an unknown assailant, November 28.——Dr. John B. Groh, health officer of Lebanon, has been appointed sanitary agent to the county medical inspector over the territory outside of Lebanon.——Dr. Samuel G. Burkholder has been elected treasurer of the Reading Medical Society, vice Dr. Thomas H. Mackin, deceased.——Dr. Fred W. Bell, Sharon, who has been seriously ill with typhoid fever, is reported convalescent.——Dr. Henry W. Saul, Kutztown, has been appointed deputy coroner of Berks County.——Dr. Lewis H. Taylor, Wilkesbarre, is making an extended tour of the West.——Dr. Charles L. Templeton, resident physician of the Reading Hospital, has resigned and will practice in Seattle, Ore.——Dr. Joseph P. Kennedy, Columbia, has been appointed surgeon on the Philadelphia division of the Pennsylvania Railroad, vice Dr. Alexander R. Craig, resigned.——Dr. A. Arthur Barton, Plains, was thrown from his carriage recently and sustained a fracture of a rib.——Dr. Arthur P. Hitchens succeeds Dr. J. J. Kinyoun as director of the biologic laboratories of the H. K. Mulford Company. Dr. E. D. Reed, Ann Arbor, Mich., has been engaged to direct research work, particularly in pharmacology and physiologic chemistry.

Typhoid News.—At a meeting of the Lackawanna County Medical Society, held in Scranton, December 29, the newspapers were criticised for disseminating unreliable information concerning the typhoid fever epidemic, and the following resolution was adopted by the society: "That it is the sense of the meeting that much harm has been done by the publication of irresponsible and unwise statements in the public press, and that the press is hereby requested for the benefit of the community not to publish any articles concerning the present epidemic except what may come officially from the department of public safety, from the Scranton Homeopathic Medical Society or from the Lackawanna County Medical Society." The typhoid situation, according to the reports, remains unchanged. On December 29, 50 new cases were reported, making a total of 751 cases reported till noon of that date. The infection is believed to have its origin in the city's water supply, and the epidemic present is in a severe type and accompanied with increased mortality. A report on January 6 states that only 5 new cases were reported on that day, making a total of 975, and that 21 days have elapsed since the water from the Elmhurst reservoir was shut off. On January 5 and 6 11 deaths were reported.——Typhoid fever is reported to be epidemic at Greenburg.—Up to December 15 nearly 5,400 cases of typhoid fever had been reported in Pittsburg, a greater number than ever before on record. The superintendent of the board of health believes that with the opening of spring the greatest and most disastrous epidemic of typhoid fever in the history of Pittsburg will be witnessed. ——Newfoundland is threatened with an epidemic of scarlet fever. Several cases have been reported and the schools have been ordered closed.

Philadelphia.

To Aid Chinese.—The medical students of the University of Pennsylvania are attempting to raise $2,000 of the $20,000 fund required to maintain a branch medical school in Canton, China.

Hebrew Charities.—The Society of United Hebrew Charities dedicated its new building at 516 North Fourth Street on New Year's Day. The building contains offices for physicians and a large dispensary.

Hospital Report.—The close of the fiscal year of Stetson Hospital, November 1, shows a total of 22,276 cases treated, of which 7,445 were surgical, 4,765 in the ear, nose and throat department, 4,198 in the eye department, 1,794 in the department of skin diseases, and 3,151 medical cases.

Professor Keen Resigns.—Dr. William W. Keen has resigned as professor of surgery in Jefferson Medical College, with which institution he has been connected for 27 years. The trustees have elected him professor emeritus of surgery and he is going abroad in March for a vacation and rest of about a year. For 13 years Dr. Keen was professor of artistic anatomy at the Academy of Fine Arts, and for seven years professor of surgery at the Woman's Medical College. He is also on the staffs of many hospitals as consulting surgeon.

Contingent Donation from Carnegie.—It is announced that Andrew Carnegie will contribute $100,000 toward the building of a new home for the College of Physicians. The contribution is made on condition that the members of the society raise an equal amount. Three years ago Mr. Carnegie offered to contribute $50,000 if an equal amount could be raised in subscriptions. After the fulfillment of the society's part of the contract, finding that $100,000 was inadequate to furnish a suitable home for the society, he made his second offer of $50,000. At present $30,000 has been raised in subscriptions from the medical profession toward the additional $50,000 required.

Personal.—Drs. Ernest M. Dorsett and Milton F. Percival have passed the examination for the position of resident physician at the Municipal Hospital.——Dr. W. W. Richardson has been elected resident physician at the State Hospital for the Insane, Norristown, vice Dr. D. D. Richardson, deceased. ——Dr. William L. Rodman was the guest of honor at the annual smoker and luncheon of the W. L. Rodman Surgical Society, held at the University Club, December 18.——Dr. William W. Trinkle, common councilman, has resigned as district physician.——Dr. Joseph W. Hearn is reported to be securely convalescent.——Dr. Henry Sykes was recently appointed chief resident physician of the Philadelphia Hospital.

Quarantine Notes.—The authorities of the state quarantine station, Marcus Hook, have taken 22 men suffering with beriberi from the *Spithead*, a vessel from India. The ship is under surveillance, has been carefully fumigated, and the Lascar patients are being treated at the quarantine station.——The German steamship *Kybfels*, from Calcutta, with a crew of 48 Lascars, has been held in quarantine at Reedy Island, since December 23, with what is believed to be bubonic plague on board. One sailor died on the voyage and was buried at sea, and one sailor is ill and is isolated from other members of the crew. After examination by government experts the steamer has been allowed to enter port.——One of the sailors having smallpox, the crew of the British steamship *Oswestry* was transferred to the Marine Hospital for observation.

VIRGINIA.

Personal.—Dr. J. McCaw Tompkins has been appointed chief interne of the Memorial Hospital, Richmond, vice Dr. Samuel Bowen.——Dr. Charles W. P. Brock, police surgeon of Richmond, fell December 4 and sprained his right ankle.——Dr. Charles McCulloch, Howardsville, lost his hand and a portion of his right forearm in a machinery accident December 10. With the assistance of his wife he dressed the wound and went to Lynchburg, where a second amputation was made above the elbow.

Medical Association Meets.—At the eighth session of the Southside Virginia Medical Association at Emporia, December 13, an interesting case of elephantiasis was reported by Dr. Lucien Lofton of Emporia, and the following officers were elected: President, Dr. Thomas J. Taylor, Cochran; vice-presidents, Drs. J. H. Halligan, Smoky Ordinary; H. B. Mahood, Belfield; R. T. McNair, Emporia, and E. Leavenworth McGill, Petersburg; secretary, Dr. R. T. McNair, Emporia, and treasurer, Dr. Otho C. Wright, Jarrett.

WEST VIRGINIA.

Resolutions of Respect.—At a special meeting of the Monongalia County Medical Society, resolutions of respect were adopted regarding the death of Dr. Edward L. Naret, Morgantown, and extending sympathy to his bereaved wife and friends.

GENERAL.

Western Tuberculosis Conference at Minneapolis.—The Western Conference on Tuberculosis is to be held February 5 at Minneapolis in connection with the National Tuberculosis Exhibit, which will be shown in that city from February 2 to 13 inclusive. This conference, which was organized at Chicago

in January, 1906, is expected to embrace the states of Ohio, Michigan, Indiana, Missouri, Iowa, Wisconsin, Minnesota, North Dakota and South Dakota. The Minnesota State Association for the Prevention and Relief of Tuberculosis will hold a meeting on February 6.

Infection in Labrador.—Dr. Wilfred Grenfell, whose work is referred to editorially in this issue, made an address before the New York Academy of Medicine, Dec. 29, 1906, concerning his work on the Labrador coast. He has observed that there are, in general terms, no endemic diseases along the Labrador coast. It is an excellent field for the study of incubation periods. Those infections which its natives have contracted have in his experience, been transmitted, along with other blessings of civilization, from Halifax and other parts foreign to this region. And, in accordance with the natural history of infections, those Laboradoreans who have been stricken have suffered to a much greater degree than peoples among whom such infections have existed for many generations, and which have become a matter of course. It is the same in Labrador as it was among the Fijians, to whom measles, so comparatively innocuous among us, was brought for the first time in their history in 1875; among the 150,000 inhabitants of the Fiji islands, 40,000 perished by this disease. Thus, in one little Laborador settlement which was for the first time invaded by typhoid, Dr. Grenfell, when he arrived on his healing mission, found the frozen bodies of some eighty who had succumbed speedily and most miserably. Of course many of these lives might have been spared had the people known the peculiar manner in which the typhoid infection is to be met; but undoubtedly most of the deaths were because of the unusual malignancy of an infection, when invading a community which had theretofore been spared. Beriberi was unknown among these good folk until a Norwegian sailor introduced it. Leprosy seems to be unknown among them, although fish is pre-eminently the food consumed. Measles, scarlet fever and diphtheria have among them a much graver prognosis than among us. Pulmonary tuberculosis is almost invariably fatal, notwithstanding that one essential to its cure—cold, germ-free air—is ideally abundant. But of this curative agency they seem to make no use. The house, or rather hut of a consumptive is, like their dwellings in general, hermetically sealed during the cold months. And as in typhoid, the principles of prevention are either unknown or not grasped by them. The consumptive spits promiscuously, and the bacteria as is usual when finding a soil quite altogether fresh, are uncommonly virulent. This high death rate is unquestionably due to these things, but mostly to the fact that tuberculosis has until recent years been almost quite unknown in "Dr. Grenfell's parish." They have no natural immunity to it. Like the negroes and the Indians, they must acquire such an immunity through the sad experiences of many generations of their people.

CANADA.

Personal.—Dr. R. S. Price, St. John N. B., has accepted the professorship of clinical surgery and physiology in Kansas City University.——Dr. P. C. Woodworth, Wolfville, N. S., has moved to Arizona.——Surgeon-Colonel G. Carleton Jones, Halifax, N. S., has been appointed to succeed Colonel Fiset as director-general of the militia at Ottawa, Can.——Dr. J. O. Todd, Winnipeg, Man., is visiting the hospitals of Chicago and New York, after which he will proceed to London, Eng.

Hospital News.—During the past few weeks every hospital in Montreal has been crowded and nearly all have been refusing patients. It is estimated that 10 per cent. of the patients are suffering from typhoid fever. Hospital abuse seems to be rampant, as it is stated that almost daily female patients drive up to the hospitals in cabs to receive charity treatment. ——The Toronto Provincial Hospital for the Insane has recently made a new departure by appointing as resident pathologist, Dr. J. H. Fitzgerald, who has just spent two years at Baltimore in neurologic and physiologic clinics.

Professor Osler's Visit to Toronto.—When in Toronto recently to attend the centenary birthday anniversary of his mother, Dr. Osler was entertained December 15 by Dr. R. A. Reeve, dean of the Medical Faculty of Toronto University. On December 18 Dr. Osler unveiled a portrait of the late Dr. J. E. Graham, formerly professor of medicine in Toronto University, a gift by the widow and son, Dr. J. S. Graham, to the Ontario Medical Library. December 19 Dr. Osler addressed the profession of Toronto at the regular meeting of the Toronto Medical Society on the advantages of an academy of medicine for Toronto, advocating the amalgamation of the Toronto Clinical, the Toronto Medical and the Toronto Pathological societies for the purpose of a nucleus.

FOREIGN.

Italian Congress in Aid of the Blind.—A national "congress of typhlology" was recently held at Rome to discuss measures in relation to the blind. There was a large attendance, including many members from Germany, France and England, and a number of important resolutions were adopted.

The Schaudinn Memorial Fund.—The subscription list for the Schaudinn endowment has been closed, the total received having been nearly $21,500. Professor Nocht is the chairman of the committee in charge of the endowment, for which he is responsible to the mayor of Hamburg. Among the purposes of the endowment is the awarding of a medal every two years for the best work in the domain of microbiology, to be given irrespective of nationality.

Seventieth Birthday of E. von Bergmann.—The name of E. von Bergmann of Berlin is most widely known as a pioneer in military surgery, but he has a special claim on the gratitude of the profession in Germany as to him is due the present system of free courses of postgraduate instruction at numerous points throughout Prussia. Although only six years have passed since the idea was first suggested, yet the system is now in complete working order with its own central building in Berlin for loan collections, exhibitions, etc., of everything connected with the practice of medicine in its latest flowering. The *Ztschr. f. aerztl. Fortbildung*, the organ of the postgraduate system, devotes most of its issue for December 15 to a biographical sketch of von Bergmann, with a fine portrait. Among the festivities on the occasion of his recent seventieth birthday was a banquet tendered to him and Waldeyer December 13, and another banquet, tendered by the profession, with 475 guests, on his birthday proper, December 16. He was born in Russia, has taught in six university medical departments in Russia and Germany, and was called to Langenbeck's vacant chair of surgery at Berlin in 1882. He continued the *Archiv. f. klin. Chirurgie* founded by the latter, and, with König and Richter, publishes the *Centrbl. f. Chir.* He has been president of the Berlin Medical Society since Virchow's death.

Koch Finds a Preparation of Arsenic the Specific for Sleeping Sickness.—Robert Koch has reported officially to the secretary of the interior at Berlin that he has found atoxyl, a preparation of arsenic, as truly a specific for sleeping sickness as quinin is for malaria. His party is located on one of the islands in the Lake Victoria Nyanza, in the heart of Africa, and he writes exultingly that experience with hundreds of cases shows that the trypanosomes vanish from the glands by the eighth hour after subcutaneous injection of the remedy. The trypanosomes are apparently uninfluenced by the drug up to the sixth hour, but they then rapidly vanish and none is to be found by the eighth hour. As they vanish the patients feel immeasurably improved, and this improvement persists and is progressive. The natives are flocking to the party for relief and they now have about 900 under treatment. Instead of giving the drug according to the usual technic for arsenic, Koch follows the rules for quinin, giving 0.5 gm. on two consecutive days. No by-effects were ever noted, and the dose might be increased, but this is not necessary, as the desired results are obtained with this amount. The expedition took a supply of atoxyl and trypan red with them, the two drugs, he states, known to date to be effectual against trypanosomes. The report is published in full in the *Deutsche med. Wochschr.* for December 20. It describes the flies which convey the trypanosomes and reviews their habits of life, etc. Koch states that he has found the same trypanosomes in other animals, predominantly in the crocodile. Among 1,497 tsetse flies examined, 177 were found with freshly sucked blood in their digestive organs. In 66 the blood was recognized as coming from a mammal and probably from man. In the other 111 the blood corpuscles were oval and nucleated and were probably derived from the crocodile, especially as with the blood were frequently encountered specimens of the blood parasite peculiar to the crocodile. He thinks it highly probable that the blood of the crocodile is one of the most important conditions for the existence of the *Glossina palpalis*, at least in the locality where he is conducting his research. The natives say that the crocodiles are often bitten by the flies. Experiments with crocodiles are now under way. The *Trypanosoma gambiense*, assumed to be the cause of sleeping sickness, was found in only one of the 96 flies containing trypanosomes. The *Glossina palpalis* has long infested the regions recently invaded by sleeping sickness, although it seems to be confined to the shores of waterways and lakes. The comparatively peaceful conditions now prevailing in the interior of Africa have promoted intertribal relations and allowed the inland people to take advantage of the fishing in the lake from which they were formerly

debarred by a warlike tribe. This tribe has been nearly exterminated by sleeping sickness in the last four years, and the influx of outsiders has contributed to spread the disease. It seems to affect the men most, many of the villages having no inhabitants left except women and children. The missionaries estimate that the population of the islands, which was about 30,000 four years ago, is now less than 12,000. In one village where there used to be 200 people there are now only 55, and Koch found the trypanosome in 17 of these. Examination of the blood is frequently negative, but excision of a scrap of the tumefied glands in the neck always gave positive findings in case of trypanosomiasis. The injected atoxyl seems to act on all the infected glands of the body at once, as they all return to normal size almost simultaneously after the injection of atoxyl. This drug is one of the cacodylates and has been used for some time in cases indicating arsenic. It is the anilid of meta-arsenous acid, and is said to be less toxic than the ordinary arsenical compounds and free from the garlicky odor which the cacodylates impart to the breath and perspiration.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Dec. 24, 1906.

King Edward's Hospital Fund for London.

At a recent meeting of the general council of King Edward's Hospital Fund, presided over by the prince of Wales, the executive committee recommended the distribution of $550,000 to the London hospitals. The number of hospitals applying for grants was 105. The committee was pleased to learn that arrangements are being made for the amalgamation of the City Orthopedic and National Orthopedic hospitals. In regard to the throat, nose and ear hospitals, negotiations are also proceeding for amalgamation. A satisfactory reduction in hospital expenditure was reported as a result of the investigations on expenditure previously published by the committee, those hospitals in which the expenditure is greatest having taken advantage of the information supplied as to the others. Thus in 1903 the average cost of maintenance per bed in the 16 large general hospitals of London was $472; in 1904, $470, and in 1905, $438. The total effect has been a saving of $105,000 in expenditure.

New Premises for the British Medical Association.

An important block of buildings is to take the place of the existing premises of the British Medical Association at the corner of the Strand and Agar Street. Additional houses have been acquired for the site on the Agar Street side. On the ground floor will be shops and possibly a bank at the corner. All above this will be the offices and rooms of the association. There will be a spacious entrance hall, with staircase and elevator leading to the upper floors. On the first floor will be the large library and council room and the general offices. On the second floor will be the medical secretary's department. On the third floor will be rooms for officers of the association, chairmen of committees, a general conversation room, and rooms for extension. On the fourth floor will be the editorial department, and on the fifth the printing department. The lower part of the two frontages will be of gray granite, the upper part of Portland stone. The roofs will be covered with Westmoreland green slates. A feature is made in the elevations of the wide windows.

Fatalities Due to Motor Carriages.

The recent development of motor traffic in London has added a new terror to the streets and has been attended with a number of accidents. An inquest has been held on a man killed by a motor omnibus. The roadway was very slippery and the driver said that when he applied the brakes the omnibus skidded. Moreover, it had been skidding all the way down the road. However experienced a driver was he could not avoid skidding. The coroner asked, "How is it that such vehicles are allowed in the streets of London?" In his summing up he said that during August and September 21 persons had been killed by motor cars, motor omnibuses and mechanically driven tram-cars, and 797 accidents had occurred in which 149 persons were injured. During the same period there were only three deaths due to horse-drawn vehicles. The jury returned a verdict of accidental death, and added a rider that some efficient guard should be fitted round the wheels in order to prevent similar accidents in the future. The solicitors for the company said that their clients would do what they could to meet the views of the jury. Up to the present nothing had been invented to prevent skidding, and the police regulations contain no reference to this danger.

A Physician's Bequests.

Dr. Schorstein, physician to the London Hospital, whose untimely death was recently announced in THE JOURNAL, bequeathed $2,500 to the regius professor of medicine at the University of Oxford for the pathologic department of the medical school, $2,500 to the London Hospital, and a sum which will probably amount to some $50,000 in trust to the University of Oxford, subject to certain life interests, for disposal as that body shall think fit.

The Regulation of Milk Supply.

A deputation on this subject has been received by the board of agriculture. Prof. W. R. Smith of King's College, principal of the Royal Institute of Public Health, headed the deputation. He emphasized a report by the committee of the institute, which stated that the time had arrived in the interest of the public when vigorous steps should be taken to safeguard consumers of milk against infectious organisms. Tuberculosis can be conveyed from the cow or from the milker. The deputation recommended that the orders as to cowsheds should be made compulsory instead of permissive, that the registration of dairies should imply a license, that more stringent regulations should be made for controlling the sale of milk in small shops, that specially constructed milk cans should be utilized for the conveyance of the milk from the farms to the city or bottles such as those used in America and Denmark, and that the county councils should be empowered to appoint veterinary inspectors to examine the cows. Replying to the deputation, Sir E. Strachey, parliamentary secretary to the board of agriculture, said that the board is of the opinion that every possible precaution will be taken to protect the public, and that anything reasonable, which will not harass the trade, will be done.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Dec. 10, 1906.

Junior Physicians Make Organized Protest.

The disagreeable conditions under which the junior doctors of our hospitals are serving have led recently to an unusual outcome. As a means of protest against the present methods of administration, the entire staff of one of the largest hospitals refused the meals served them at the hospital, and for a few days the portions of all the doctors were returned unanimously with the comment "unfit for eating." The matter was brought to the knowledge of the public in the daily papers, with the result that numerous former patients of that hospital confirmed the statements of the doctors by their own experiences. The quality of the food was improved and the conditions pertaining to the appointment and pay of the medical staff were made the object of a thorough examination. In consideration of some recent cases of blunders in the hospitals due to the overburdening of the medical men, a better arrangement as to service and payment has been widely demanded by the press, with the result that the requested reforms have been promised. Unless the promise is kept before February a general hospital strike is planned.

Pharmacists Against Dispensing Doctors.

The organized officially recognized pharmacists are advocating legislation forbidding the country practitioner to dispense the medicines he prescribes. Pharmacists are threatening to strike if their plea is not heeded by the authorities. A mass meeting of the country doctors has taken place to discuss the question, and a resolution was unanimously adopted binding all practitioners to stop practicing on a given day if the clause depriving them of their right to dispense medicines should be incorporated in the pending legislation. In many villages there is no official pharmacy.

"Nicotin Free" Cigars and Cigarettes.

The imperial government tobacco factory has recently brought out a new variety of cigars and cigarettes called "nicotin free." They ought rather to be called "nicotin poor," as they are not absolutely free from that poison. The main procedure which renders the tobacco leaves less poisonous is by moistening them with a 1 per cent. solution of sodium chlorid and potassium hydroxid. In this way the amount of the alkaloid is reduced from 30 to 40 per cent. Chemical tests of the smoke produced by such tobacco resulted in confirmation of the assertions of the factory; nevertheless, the smoking of 30 cigars produced on all the experimenting men a sense of oppression, nausea and tingling in the ears, due to the presence of traces of nicotin and of pyridin substances. Physicians are recommending these cigars to inveterate smokers exhibiting the effects of nicotin poisoning, such as tobacco amblyopia and affections of the auditory nerves, but yet unable to give up the use of tobacco.

Correspondence

The One-Year Clause in Reciprocity.

CRAWFORDSVILLE, IND., Jan. 2, 1907.

To the Editor:—When the basis for establishing medical reciprocity was adopted by the American Confederation of Reciprocating, Examining and Licensing Boards, it was deemed wise that a clause be incorporated requiring applicants to have lived and been in active practice for at least one year or more in the state of last residence. The purpose of this requirement being for a two-fold reason, first, that an applicant might have time to establish a professional and ethical character to which men with due regard for truth could certify; second, the prevention of the traveling itinerant, without responsibility, and with no settled or fixed place of residence, from securing license in the various states entering into the reciprocity compact.

We are well aware of the fact that the one year clause in reciprocity is a little hard on state examining boards desiring to extend the "courtesy" of an examination to the entire prospective output of the medical colleges of its own state, before students are graduated. Dr. Webster of the Illinois Board of Health asserts that by "granting the courtesy of a conditional examination at least one month before graduation," the graduates of Illinois medical colleges are "thus ready to engage in practice with the least possible expenditure of time and money in securing the requisite license." I am unable to understand the process of reasoning by which Dr. Webster reaches this conclusion.

As to the expenditure of time, I submit that it takes no longer to answer one hundred questions in Indiana than it does in Illinois. As to the question of expense, I am sure that it costs the graduate of an Illinois medical college who intends to locate and practice in another state more money by fifteen dollars to accept the "courtesy" extended by the Illinois board, than it would by going directly to the state where he expects to locate, for his examination.

It is perhaps unnecessary to say that young men just out of medical college, graduating after four years of work, are not overburdened with surplus funds, and it is passing strange that they should be willing to pay the fee and take the examination in a state in which they have no intention of locating and practicing, and immediately after receiving a certificate apply for license in another state and pay another fee. It is no hardship to the recent graduate, who has not yet entered practice, to elect to take his examination test of qualification in the state where he intends to locate, and it is reasonable to presume that if uninfluenced, he will do so.

For business reasons, or on account of ill health of family, it often becomes necessary for good and well qualified men, licensed to practice in one state, to move to another. It is an unnecessary hardship to compel this class of physicians to submit again to the examination test if they are able to satisfy the state examining authorities that they have complied, in the state where the original license was issued, with substantially the same requirements which obtained on the same date in the state where license by reciprocity is sought. It is for this class of physicians that reciprocity was established.

I submit that reciprocity is entirely unnecessary for the recent graduate who has not yet entered the practice of medicine, and it was never intended to apply to such. Applicants holding the certificate of another licensing board, and who have never practiced under the said certificate, should be refused a license by reciprocity until they have practiced at least one year under such a certificate, thereby showing their good faith in obtaining said certificate as well as establishing a professional standing for which good men will vouch. It may reasonably be stated that some of the recent graduates have not at the time of graduation chosen a location. Permit me to suggest to such, that it will be a less complicated and expensive procedure to wait until a location is chosen, and then proceed at once to make application for license to the examining board in whose jurisdiction they have decided to locate.

Dr. Webster, president of the Illinois board, makes the following statements, "the Illinois State Board of Health is desirous of doing nothing that will interfere with interstate reciprocity on a fair, rational basis." I wish to say that the State Board of Medical Registration and Examination of Indiana is also desirous of not doing anything that will interfere with interstate reciprocity on a "fair, rational, legal basis," and the Indiana board strenuously insists that nothing is being required of applicants for license by reciprocity now, which was not required of them at the time Indiana began to reciprocate with Illinois under the Webster schedule of one hundred questions. The one year residence clause was required then, is required now, and will continue to be required by the Indiana board until convinced that it does not accomplish the purposes for which it was intended, viz., the prevention of the roving itinerant from obtaining license in all reciprocating states, or at least making it difficult for him to do so, and the removal of the chief commercial incentive to state boards which in the future might be appointed. (Of course none are now in existence.) The practical application of this rule by the Indiana board has demonstrated that it is the best safeguard yet devised to prevent abuses of licensing by reciprocity indorsement.

Under the title of "Reciprocity in Illinois," THE JOURNAL in July last, published the following: "The State Board of Health withdrew from the American Confederation of Reciprocating State Medical Examining and Licensing Boards at the meeting held in Chicago, June 20, 1906, and by unanimous resolution declined to reciprocate after Jan. 1, 1907, with any state board which exacts a supplemental examination of an applicant who has passed an examination before another board, or which requires that the applicant shall have practiced one year in the state in which he was licensed, or requires that the license issued to said applicant, be dated one year previous."

The above compels the conclusion that sister states desiring to reciprocate with the Illinois State Board must accede to views relative to rules governing reciprocity, which are in accord with opinions held by the said board. There can be no misunderstanding concerning the attitude of the said board on the "one year's residence requirement in reciprocity." The licentiates of state boards not concurring in opinion held by the Illinois Board of Health, need not apply for license in Illinois on a reciprocity basis, if the said resolution is to be enforced.

The Indiana State Board of Medical Registration and Examination is willing and expects that her licentiates seeking license by reciprocity in other states shall comply strictly with the rules governing reciprocity in the state where license is sought, provided the said state does not discriminate in the application of its rules, and in return we insist that applicants coming from other states seeking license by reciprocity in Indiana, comply with rules governing reciprocity in this state, in short, we are trying to apply the "golden rule." We have no objection to the State Board of Health of Illinois admitting applicants for license to Illinois, requiring or not requiring the one year's residence, as she may choose. We insist however, that other states shall be accorded the same privilege, by requiring or not requiring, as they may choose. The failure on the part of the Illinois board to concede this seems unreasonable, if not dictatorial. No state is enforcing any rule against the licentiates of Illinois that is not being required of the licentiates of every other state. The president of the Illinois board is therefore in error when he complains that the licentiates of that state are being discriminated against.

W. T. GOTT,

Secretary Indiana State Board of Medical Registration and Examination.

Medical Organizations and Appointments on Health Boards.

ANN ARBOR, MICH., Dec. 30, 1906.

To the Editor:—In reply to a letter of inquiry written by Dr. C. G. Parnall of Jackson, Mich., and published in THE JOURNAL under date of December 29, I would say that here at Ann Arbor the matter of appointment of health officer and members of the local board of health was first taken up by the local profession about four years ago when the Ann Arbor Medical Club voted to recommend Dr. Thomas B. Cooley for health officer and Mr. Henry J. Brown for member of the local board of health. A committee was appointed to "wait" on the mayor, who very promptly made the appointments. When Dr. Cooley removed to Detroit, I became his successor, very largely through the same influence. Politics must not enter into the affairs of the board of health at Ann Arbor. As to the honesty and efficiency of our board, we are ready to abide by the verdict of our professional colleagues. It is only during the last two years that physicians in Ann Arbor, who have been called on to determine the nature of certain contagions in behalf of the public health, have received remuneration in full for such services. Previous to this the physicians usually accepted a most liberal discount. As a member auxiliary, to the Michigan member of our National Legislative Council, I shall strive most strenuously to bring about such municipal legislation as that any physician who may be called on to render service in behalf of the public health shall be assured of a just and liberal remuneration. This all means work for somebody, but it can be done. Gentlemen of the medical profession! You are to blame if you permit politics to control the affairs of your local boards of health. Let the cities of Michigan and the cities of other states emulate our example.

JOHN A. WESSINGER, Health Officer.

Priority in Use of Atoxyl.

LIVERPOOL, Dec. 21, 1906.

To the Editor:—Reports have been repeatedly published of late which ascribe to Dr. Koch the discovery of a drug, atoxyl, which has a curative action in the treatment of human trypanosomiasis. The London *Times* has copied an article to this effect from the Cologne *Gazette*, and the London *Standard* has printed a similar article from its Berlin correspondent. These articles have been widely circulated and they lead the public to believe that Dr. Koch was the first to use this remedy in trypanosomiasis. It may be of interest to your readers to know that the beneficial action of atoxyl in experimental trypanosomiasis was discovered by the Liverpool School of Tropical Medicine and that its use has been steadily and publicly advocated by the staff of this school for the past year and a half. The first work of Dr. Thomas on this use of atoxyl was received by the Royal Society in April, 1905, and was published in their *Proceedings* in November of the same year. Dr. Thomas' next article was published in the *British Medical Journal*, May, 1905. An account of the experiments carried on by Thomas and Breinl in regard to the action of the drug in trypanosomiasis can be found in *Memoir XVI* of the Liverpool School of Tropical Medicine, 1905.

The use of atoxyl as a practical remedy in conjunction with the use of gland palpation and puncture as a diagnostic method was advocated by Todd in his official report (unpublished) to the government of the Congo Free State. These recommendations were adopted and are incorporated in the "*Mesures coördonnées concernant la maladie du sommeil*" drawn up by Dr. Van Campenhout for the use of medical and other officers of the Congo Free State.

The use of atoxyl in sleeping sickness was again recommended by members of the staff of the Liverpool School of Tropical Medicine in the following publications: Dutton and Todd, *Memoir XVIII*, Liverpool School of Tropical Medicine; and Todd, *British Medical Journal*, May 5, 1906.

It will be seen, therefore, that the whole credit for the introduction of atoxyl in the treatment of trypanosomiasis belongs to the Liverpool School of Tropical Medicine.

E. N. TOBEY, A.M., M.D.

Medical Legislation

CONFERENCE OF THE COMMITTEE ON MEDICAL LEGISLATION AND THE NATIONAL LEGISLATIVE COUNCIL.*

Annual Meeting, held in Washington, D. C., Dec. 13-15, 1906.

The Chairman, DR. CHARLES A. L. REED, Cincinnati, presiding.

The Conference of the Committee on Medical Legislation with the National Legislative Council of the American Medical Association, for the Fifty-ninth Congress, second session, was held at the New Willard Hotel, Washington, D. C., Dec. 13-15, 1906. The attendance was as follows:

COMMITTEE ON MEDICAL LEGISLATION.

CHARLES A. L. REED, CHAIRMAN, CINCINNATI.
WILLIAM L. RODMAN, PHILADELPHIA.
WILLIAM H. WELCH, BALTIMORE.

NATIONAL LEGISLATIVE COUNCIL.

NAME.	RESIDENCE.
Dr. S. D. Van Meter	1723 Tremont Street, Denver, Colo.
Dr. H. R. Burton, M.C.	Delaware.
Dr. George N. Acker	913 Sixteenth Street, Washington, D. C.
Dr. W. A. Spurgeon	Marion, Ind.
Dr. J. T. Percy	Galesburg, Ill.
Dr. E. J. Lutz	Kansas City, Kan.
Dr. C. Z. Aude	Cecilian, Ky.
Dr. W. L. Cousins	Portland, Maine.
Dr. John S. Fulton	1925 St. Paul Street, Baltimore, Md.
Dr. S. D. Presbrey	Taunton, Mass.
Dr. A. S. von Mansfelde	Ashland, Neb.
Dr. L. M. Halsey	Williamstown, N. J.
Dr. Charles A. L. Reed	60 "The Groton," Cincinnati, Ohio.
Dr. A. J. Barchfeld	Pittsburg, Pa.
Dr. W. P. Goff	Clarksburg, W. Va.
Surg.-Gen. Walter Wyman, U. S. M.-H. Service,	Washington, D. C.
Surg.-Gen. R. A. Marmion, U. S. N. Med. Service,	Washington, D. C.
Surg.-Gen. R. M. O'Reilly, U. S. A., Med Service,	Washington, D. C.

Dr. E. W. Samuel, member of Congress for the Sixteenth Pennsylvania District, was made a member by courtesy.

Dr. H. L. E. Johnson, special committeeman, by request in the Hammond and Canteen bills, was extended a similar courtesy.

NEW WILLARD HOTEL, WASHINGTON, D. C., DEC. 13, 10 O'CLOCK.

Dr. Charles A. L. Reed, chairman, on calling the Conference to order, spoke in part as follows:

Change of Policy.

It has seemed wise to the Committee on Medical Legislation to suggest a departure from the usual custom of considering all of these questions practically in executive session. We have accordingly, arranged to have several of the most important questions discussed by prominent members of Congress, by distinguished scientists and publicists and by the representatives of the profession and the public, all of whom are invited to participate in the series of public meetings. In this way we ought to be able to arrive at a conclusion from all of the various standpoints concerned, and therefore place ourselves in position to act with more wisdom on the questions which naturally come before this conference.

A DEPARTMENT OF PUBLIC HEALTH.

It is a hopeful sign of the times that the general public, through a great national scientific organization is demanding the organization of a National Department of Public Health, with representation in the Cabinet of the President. I will not go into the details of this movement, which will be fully discussed by several distinguished speakers. It is equally gratifying to be able to state that this great movement has staunch friends in both branches of Congress. The general provisions of a bill creating such a department were discussed and tentatively agreed on at our last conference. It is hoped that our special committee then appointed to consider this subject will be able to avail themselves of the counsel and advice of the distinguished legislators and publicists who are interested in the question, with the result that a bill will be formulated for presentation to Congress. Whether it will be wise or expedient to present the bill to the present short session, crowded as is the calendar with important emergency bills, is a question to be determined in conference.

MEASURE FOR THE RELIEF OF DR. JAMES CARROLL.

The ultimate completion of the Panama Canal, the present salubrity of Cuba, the safety of our southern seaboard against periodic invasion by epidemics, the maintenance of life and health of our citizens in that great section, and the stability

* The complete record of the conference (from which this report is an abstract) has been published in book form and can be obtained on application to the American Medical Association, Bureau of Legislation, 103 Dearborn Avenue, Chicago.

of our national commerce against disturbance from the same cause, all are made possible by the discovery that the mosquito is the carrier of the contagion of yellow fever. That fact was established by the labors of three men, two of whom in the interests of humanity and science subjected themselves to inoculation by infected mosquitoes. As a result of that experiment, one of them, Mr. Jesse W. Lazear, within the next few days, died a martyr's death, the other, Dr. James Carroll, survived to live a martyr's life. The only reward that he has thus far received is a disease of the heart that occurred as a result of the yellow fever, that he voluntarily contracted for the welfare of his race. This man, this hero, after risking his life to give this priceless boon to the world, after incurring a permanent invalidism in that cause, after having spent 34 years in the faithful service of his country is permitted to remain only an assistant surgeon with the rank of first lieutenant in the United States army, with the paltry salary of an officer of this grade. And with broken health this man far past the meridian of life is supposed to meet the obligations resting upon a husband, the father of seven children, and to provide against the requirements of old age. A bill for his relief, endorsed by this council at its last conference, was introduced in the Senate but has never been reported out of committee. This is a shame. Surely if Congress understood the facts of the case the bill would pass within an hour by concurrent action of both houses. To permit it longer to slumber will be to bring the blush of humiliation to the cheek of every intelligent and grateful citizen of the Republic.

ARMY MEDICAL REORGANIZATION BILL.

When, a few months back, rumors of war with Cuba filled the country, the surgeon-general of the army, prompted by a laudable desire to be in a state of preparedness for any obligation that might rest upon his department, wrote to personal friends in various states, requesting the names of first-class men to be appointed as contract surgeons. The result was both instructive and significant. With but few exceptions, first-class young men could not be prevailed upon to consider such a service. In explanation of this attitude on the part of the medical profession it was ascertained that the melancholy lessons taught by the Spanish-American war, had been all too well learned by American physicians. They had come to understand that, as contract surgeons, they had no definite status in the service; that they were without authority to enforce their orders; or, in other words, being without military rank of any character whatever there was no subaltern but that could snap his finger in their faces and place their orders at defiance. Self-respecting men of a learned profession, except in a national extremity calling for service on the altar of patriotism, will not place themselves in this humiliating position. But a few weeks have elapsed and the country is again filled with rumors, however ill-founded, of possible war, this time with Japan. If such a calamity were to befall us the present state of legislation relating to the medical department of the army would place our soldiers at the mercy of preventable disease, such as brought lasting disgrace on our country during the Spanish-American war, a disgrace for which Congress alone was responsible. The pending bill before the Congress, while far from furnishing the full measure of relief, would still do much to strengthen this important arm of the service. This bill has been before two Congresses; at the last session it passed the Senate and was reported out of committee in the House. We are convinced by assurances communicated by members of Congress to their respective constituents, that, if this bill were given a chance, it would pass the House within an hour. In the last Congress it was arbitrarily excluded from consideration by the Speaker. Responsibility for its hearing at the present session lies with the Speaker and with the Committee on Rules. It is earnestly to be wished that this committee will issue a rule on behalf of this very important measure, the passage of which has been urged by the President and Secretary of War, and by the Surgeon General of the Army and which, on referendum, has been asked for by the organized profession of the United States. It is to be hoped that the passage of this measure will be an assured fact before the adjournment of the present Congress and the council is again urged to use every proper means to this end.

After discussing the importance of anti-tuberculosis legislation, Dr. Reed continued:

THE OSTEOPATH BILL FOR THE DISTRICT OF COLUMBIA.

Any bill the object of which is to lower educational standards by creating, recognizing or in any way perpetuating any sect in medicine, whether allopathic, homeopathic, electropathic or osteopathic, is pernicious. Any such legislation, based upon assumed dogmas of practice are equally offensive to real physicians and when, as in the present instance, the primary object is to lower the standard of education, are even more damaging in their efforts upon society. And any tendency to segregate physicians into groups or cults, is to be recognized as a blow at the unity and solidarity of the profession and, consequently, an effort to diminish its aggregate efficiency. Practically all of the efforts to establish peculiar groups with eccentric names devoted to the healing art are prompted by the basest considerations of commercialism. They are purely speculative enterprises undertaken for the purpose of furnishing a trade mark to some alleged educational enterprise, or to individuals devoted to the exploitation of a confiding clientele. Where these commercial enterprises have any foundation whatever in educational qualifications, as this one has not, they gain strength and impetus by anything that smacks of exclusion or ostracism. The medical profession made a fatal blunder a half a century ago in the attitude of ostracism it then assumed toward the then embryonic sects of homeopathy and eclecticism. These cults flourished by the distinction thus conferred upon them. But when, in 1900, this error was corrected by abandoning the proscriptive policy these sects began to disintegrate and the time is not far distant when their last representatives will disappear through absorption into the great medical profession. All the sects of medicine have sprung into existence because of some pretended mastery of some pretended trick of cure. Their investigators have never yet been sufficiently presumptious at least in modern times to assume that there was a homeopathic anatomy, an eclectic physiology, or an osteopathic chemistry; or, indeed, that there were any decided differences of opinion upon such remaining fundamental branches as obstetrics or the various branches of surgical practice. The trouble has always arisen from the efforts, through some sort of legislation, statutory or conventional, to impose some dogma of cure upon somebody who either did not believe in that particular dogma or dogmas in general. Efforts to put dogmas of cure into the laws of the land are in direct antagonism with the historic fact that in a progressive science like medicine the accepted truth of yesterday is in large part the demonstrated error of to-day. This has always been true; let us hope it will always remain true. The dogmatist in medicine in a way is the enemy of progress and any attempt to give him individuality or standing in law should be opposed by every honorable means.

What is the remedy for this class of legislation, illustrated not only in the osteopath bill which passed the Senate at the last session and is now pending in the House, but in the various medical practice acts now in force in the District of Columbia. I bring all of these facts into the same category because each one of them, as I understand the situation, seeks virtually to enact into law, the dogmas to which the various cults make pretension.

The remedy that I venture to suggest is founded on the principle that any man who, after the proper preliminary education and after a proper course of study in a properly equipped medical college, has become conversant with anatomy, chemistry, pathology, bacteriology, and with the various recognized surgical specialties, can be relied upon to furnish his own therapeutics. It follows, therefore, that these fundamental branches should be made the only required branches upon which state examination should be based, and that conditions of entrance to such examination should be based upon study in any school whatever. If the Legislature will take this stand existing sectarianism will dwindle into insignificance and future sectarianism will have no excuse for emerging from the womb of venality. The remedy that I suggest is no mere theoretical deduction. At least two states in the union, namely, Alabama and Colorado, have had such laws upon their statute books for a number of years. As a result, sectarianism as a trade mark in medicine as a speculative commodity in the hands of medical adventurers has no existence in those states.

These observations are submitted to the council on my individual responsibility simply for what they are worth. Whether they are taken into serious account or not, whether they become the basis of any recognition by Congress or not, something ought to be done to stop the multiplication of the evil that would come from the passage of the Osteopath Bill. Whether this measure shall be stopped in its passage by the amendment to existing medical practice acts along the lines that I have suggested, or whether the effort should be made to defeat its passage by protest to Congress based upon a

general referendum to the medical profession I leave entirely to the discretion of the council.

UNIFORM STATE LAWS RELATING TO PURE FOOD AND DRUGS.

The National Congress at its last session passed what we all believe will prove to be a most salutary law, calculated to insure the purity of foods and drugs. This law is, naturally enough, limited in its operation to such articles of food and to such drugs as find their way into interstate commerce. But when foods or medicine are exposed for sale in the state in which they are grown or manufactured they do not come within the purview of the national law. They do, however, fall within the police power reserved to the different states under the constitution. In the exercise of this police power by different states, local laws have been enacted that are widely at variance with each other in their provisions. The result is and must necessarily be that, a state failing to regulate foods and drugs in harmony with the national law, the executors of such national law must find an increased difficulty in dealing with these articles when they are found as commodities in interstate commerce. It is perfectly evident, therefore, that in the interests of the highest efficiency in the regulation of food and drugs, such state laws should be made essentially uniform and should be framed as nearly as possible in harmony with national legislation on the subject. This question will be brought before the council by the report of the special committee appointed at our last session to report upon this problem and I ask that careful consideration be given the subject.

UNIFORM MEDICAL LEGISLATION.

This brings us to the question of uniform medical legislation, a topic that is becoming an acute one all over the country. Reciprocity in licensure, the absence of which between the states is an anomaly in a nation that calls itself a nation, is now in effect between a number of the states of the union. The tendency seems to be to extend the principle which extension has been accepted by the insertion of reciprocity clauses in a majority of the laws that have been enacted by the different states. In some instances this reciprocity exists on what is called the double basis, that is both practitioners who have been licensed by virtue of their previous status as practitioners, together with others who have been licensed by virtue of examination, are recognized by other states. But in the majority of instances where reciprocal recognition exists it is limited to licentiates upon examination. There has been a tendency to draw the line against those who have been licensed to practice because at the time of the enactment of the licensing laws they were already practitioners. This latter condition is indefensible whether viewed from the standpoint of the comity of states or of the public welfare. The theory seems to be that a state that has been forced to license some undesirable and but partially qualified medical practitioners has enough of that sort of timber and does not want any more to come in from other states. But it should be remembered that migration is in both directions; that probably as many go out of a state as come into it; and that, consequently, unrestrained reciprocation in licensure will after all, amount to nothing more or less than a fair exchange. The licensed practitioners, that is to say, those that are licensed without examination, are liable to be about as good a lot in one state as in another. I mention these facts to urge upon the council the importance of taking into serious consideration the initiative of a movement which shall have for its object the actual nationalization of our medical profession by removing unnecessary limitations of practice from every individual member of that profession who occupies a position of responsibility in the eyes of the law.

UNIFORM LAWS WITH REFERENCE TO QUACKERY AND CHARLATANS

One of the most important signs of the times is the fact that the fight against quackery and charlatanism, a fight that has been waged for years and for generations by the medical profession, has at last been taken up by the general public. During the past 18 months influential magazines and newspapers have exposed many frauds connected with this thoroughly venal practice.

Recently in the state of New York a convention attended by representatives not only of the three learned professions, but journalists, educators and delegates from more than 100 educational, benevolent, philanthropic and humanitarian organizations, met in convention and effected a national organization for the purpose of waging war upon this consciousless curse of society. The program of this new association, known as The National Public Health Defense League, has not yet been promulgated, aside from the fact that it is a lay movement which contemplates effective organization for this specific purpose in every state in the Union. What ever that program may be the effective coöperation of the medical profession as represented in and by this Council can be relied upon. But here again we are brought face to face with the necessity for uniform state laws, dealing with this great problem. For as soon as these vampires are dislodged from one state they immediately begin to ply their vocation in a neighboring state where laws are more "generous." Our national government has assumed a sound attitude on the subject by excluding much of the literature of these people from the mails. The next logical step is similarly to exclude from the mails all newspapers or other periodicals that carry their advertisements, for such advertisements are distinctly a part and a most effective part of their "literature." I urge upon the Council the importance of memorializing Congress on this important question.

PUBLIC MEETINGS FOR THE DISCUSSION OF MEDICO-POLITICAL SUBJECTS.

The American Medical Association has inaugurated the policy of holding meetings attended by the general public for the discussion of questions of joint interest to the medical profession and the public. These meetings have already been productive of much good and when they become more general, a better understanding and a more effective coöperation will result. It is urged that every member of this Council through his auxiliary committeemen in each county have meetings of this character called for the purpose of discussing with the public—and actual discussions—not formal one-sided speeches should be encouraged on such subjects, for example, as those that will engage the attention of this conference. In this way, better than in any other yet adopted, the public will be put in a position intelligently to demand such popular health legislation as will best subserve the general welfare.

DR. H. R. BURTON (M. C. from Delaware), expressed his appreciation of the movement outlined in the chairman's address.

DR. A. S. BARCHFELD (M. C., 32 Penn. Dist.), on speaking of the Chairman's address, confined his remarks chiefly to the question of the proposed Department of Public Health. He said in part:

Our government last year appropriated $59,000,000 for the maintenance and the upbuilding of our army. It appropriated $113,000,000 for the preservation and upbuilding of our navy. It appropriated $138,000,000 for pensions for soldiers of the Spanish-American war, of the Civil war, of the Mexican war, and I think for a few survivors of the War of 1812. If this government is good enough to appropriate large sums along those lines, it should certainly be ready, anxious and willing to appropriate some money for the proper maintenance of an efficient health department, carrying with it a secretary of health to look after the health and the lives and the quarantine of this great and mighty nation. We are too progressive to be caught napping. We must keep moving and we must move in the right and proper direction. The people of the great American nation care absolutely nothing for expense. What they want is results and action. The last Congress appropriated the sum total of $880,000,000 and practically not one dollar directly in the interests of the health of the people of this nation.

If you will draw a proper bill, and you are medical men—you are not lawyers, nor am I—give us the right kind of a bill, one that will stand the test of the United States, and of the respective states, and I promise you that the people upon that hill will pass such a bill. (Applause.)

It is true that the subject, as far as the people of the United States are concerned, is practically embryonic. Its limitations are not even confined to that magnificent address delivered by your president just a few moments ago. He practically covered every subject in the scope of medicine, surgery, pathology, diagnosis, therapeutics and every other branch. But I want to say to you that there is no limit to the work that this mighty department of health can do for the betterment of the health and the lives of the people of this government.

About 11 months ago, I placed myself in communication with Dr. Reed, shortly after your last meeting of your Council. I was here last winter during your session. I did not know anything about it, although I had attended the National Medical Association at Portland, Ore. It is true that I did not read a paper. Had I done so, I might have introduced myself more to the members of this Council. But, I drew up a bill in my humble capacity as a practical layman, a physician, but a layman as far as understanding the laws of this nation are concerned.

I am going to ask you to take my bill under discussion. Help me get up a perfect bill, and I want the assistance of my very good friend, Surgeon-General Wyman, along those lines; and his very good colleagues of the Army and the Navy Departments to help you and to help me to formulate such a bill. I would like to read, for the benefit of this Council, a few of the provisions of my bill:

BILL ON DEPARTMENT OF PUBLIC HEALTH.

"Be it enacted, etc.,

"That there shall be at the seat of government an executive department to be known as the Department of Public Health and a Secretary of Public Health who shall be at the head thereof, who shall be appointed by the President, by and with the advice and consent of the Senate, who shall receive a salary of eight thousand dollars per annum, and whose term and tenure of office shall be like that of the heads of the other Executive Departments; and Section one hundred and fifty-eight of the Revised Statutes is hereby amended to include such Department, and the provisions of title four of the Revised Statutes, including all amendments, thereto, is hereby made applicable to said Department. The said Secretary shall cause a seal of office to be made for the said Department of such device as the President shall approve, and judicial notice shall be taken of said seal.

"There shall be in said Department an Assistant Secretary and a Second Assistant Secretary, who shall be appointed by the President, by and with the advice and consent of the Senate. They shall receive a salary of five thousand and four thousand and five hundred dollars, respectively, and shall perform such duties as shall be prescribed by the Secretary or required by law.

"There shall be also one chief clerk and a disbursing clerk and such other clerical assistants as may from time to time be authorized by Congress; and the Auditor for the State and other Departments shall receive and examine all accounts of salaries and incidental expenses of the office of the Secretary of Public Health and of all bureaus and offices under his direction all accounts relating to the business within the jurisdiction of the Department of Public Health; and certify the balances arising thereon to the Division of Bookkeeping and Warrants and send forthwith a copy of such certificate to the Secretary of Public Health.

"There shall be vested in the Secretary of Public Health the power to absolutely control the quarantine of the United States and its possessions; the power to prevent and eliminate, so far as may be possible, all epidemic, endemic and zymotic diseases; the power to insure to the people the pureness of all foods, drugs, alcoholic liquors and patent medicines; the power of experimental research along every line of modern medicine, surgery and chemistry, and the following named offices, bureaus, divisions and branches of the public service shall be, and hereby are, transferred to the Department of Public Health, and the same shall hereafter remain under the jurisdiction and supervision of said Department of Public Health: Public Health and Marine-Hospital Service, and Division of Chemistry of the office of the Commissioner of Internal Revenue, heretofore under the jurisdiction of the Department of the Treasury; Office of the Surgeon-General of the Army, heretofore under the jurisdiction of the Secretary of War; Bureau of Medicine and Surgery, heretofore under the jurisdiction of the Secretary of the Navy; Government Hospital for the Insane, Freeman's Hospital, Columbia Hospital for the Deaf and Dumb, and Medical Examining Boards of the Bureau of Pensions, heretofore under the jurisdiction of the Secretary of the Interior. And the Secretary of Public Health shall have control of gathering and distributing such information as he may deem necessary which naturally relate to the subjects confided to his Department; and the said Secretary of Public Health is hereby given the power and authority to arrange the work of the bureaus confided to his Department, and to consolidate any of the Bureaus and offices transferred to his Department, and said Secretary shall also have authority to call upon other Departments of the Government for statistical data and results obtained by them; and the Secretary of Public Health may collate, arrange and publish such information and in such manner as to him may seem wise.

"That the official records and papers now on file in and pertaining exclusively to the business of any bureau, office, department or branch of the public service transferred by this act to the Department of Public Health, together with the furniture now in use in such bureau, office, department or branch of the public service, shall be, and hereby are, transferred to the Department of Public Health.

"All unexpected appropriations, which shall be available at the time this act takes effect in relation to the various offices, bureaus, departments and other branches of the public service, which shall, by this act, be transferred or included in the Department of Public Health, shall become available from the time of such transfer for expenditure in and by the Department of Public Health, and shall be treated the same as though said branches of the public services had been directly named in the laws making said appropriation as parts of the Department of Public Health, under the direction of the Secretary of said Department.

"The Secretary of Public Health shall have charge of the buildings or premises occupied by or appropriated to the Department of Public Health, of the library, furniture, fixtures, records and other property pertaining to it or hereafter acquired for use in its business, and he shall be allowed to expend for periodicals and the purposes of the library, and for rental of appropriate quarters for the accommodation of the Department of Public Health within the District of Columbia and for all other incidental expenses, such sums as Congress may provide from time to time. Provided, however, that where any office, bureau, or branch of the public service transferred by this act to the Department of Public Health is occupying rented buildings or premises, it may still continue to do so until suitable quarters are provided for its use; and provided further, that all officers, clerks and employés now employed in or by any of the bureaus, offices, departments or branches of the public service transferred by this act to the Department of Public Health are each and all transferred to said Department at their present grades and salaries, except where otherwise provided in this act; and provided further, that all laws prescribing the work and defining the duties of the several bureaus, offices, departments and branches of the public service by this act transferred to and made a part of the Department of Public Health, so far as the same are in conflict with the provisions of this act, remain in full force and effect until otherwise provided by law.

"All duties performed and all power and authority now possessed or exercised by the head of any executive department in and over any bureau, office, department or branch of the public service by this act transferred to the Department of Public Health, or any business arising therefrom or pertaining thereto, or in relation to the duties performed by and authority conferred by law upon such bureau, office, officer, board, branch or division of the public service, whether of an appellate or advisory character or otherwise, shall hereafter be vested in and exercised by the head of the said Department of Public Health.

"That there shall be in the Department of Public Health a bureau to be designated as the Bureau of Medicine, Surgery and Chemistry, and chief of said bureau, who shall be appointed by the President, and who shall receive a salary of four thousand dollars per annum. There shall also be in said bureau such clerical assistants as may from time to time be authorized by Congress. It shall be the province and duty of said bureau, under the direction of the Secretary, to ————————

"The Secretary of the Public Health shall have authority to call on the diplomatic and consular offices of the United States, through the Secretary of State, for reports upon————————

"It shall be unlawful for any person to advertise in any newspaper, magazine or other periodical any quack nostrum and anything concerning a quack doctor, and, on conviction, such person or persons shall pay a penalty of————————

"It shall be a misdemeanor to offer for sale or to manufacture any food, drug, alcoholic liquor or medicine; and upon conviction of each and every offense the person or persons shall be————————

"That there shall be in the Department of Public Health a bureau to be designated as the Bureau of————————, and a chief of said bureau, who shall be appointed by the President and who shall receive a salary of———— dollars per annum. There shall also be in said bureau such clerical assistants as may from time to time be authorized by Congress. It shall be the province and duty of said bureau, under the direction of the Secretary, to exercise control of the treatment of consumptives at military posts; to————————."

Now, my friends, I want to say this to you. That was about the very best bill that I, in my humble capacity as a physician, could draw. Last year I understand that when this Council met, you ordered two attorneys to get you up a bill. But I am told that the Trustees of the American Medical Association would not stand for the same. The expenses were too much. That is very unfortunate. You as practical professional men know that when one is sick they appeal to you; when they need clothing they go to a clothier, and when they are in trouble legally they consult a lawyer. It is too bad that the American Medical Association, through its Council, should not be in position to pay for legal talent to draw up a constitutional bill that would meet the approval of the Supreme Court of the Unite States, if necessary.

My friends, I want to advise you at this time to get your bill ready. We will take care of your bill, and if we can not hope to pass it at this session, the advertisement, the discussion that will ensue between now and the first session of the Sixtieth Congress, which shall be this time one year hence, will all inure and act to our credit and will assist us materially in bringing to our plans certain people who might otherwise stand in opposition to us.

I want to say to you that I thank you for this little hearing. I thank you for this reception. I am proud of you as a profession. I am proud as a member of your profession to be in a position, on the floor of the House, to carry into execution such legislation as you advise, such as well inure to the benefit of the great and mighty nation, of which nation you are no common part.

(To be continued.)

Sanitation at Panama.

The following from the *Citizens' Bulletin*, Cincinnati, shows that the efforts of Dr. Charles A. L. Reed, Cincinnati, chairman of the Committee on Legislation of the American Medical Association, to bring about better hygienic conditions at Panama, are being appreciated by the public. Few outside of our profession know that it was through the publication of his report that the radical changes were made.

The promise made by President Roosevelt, in his message on Panama, that Col. W. C. Gorgas, Chief Sanitary Officer of the Canal Zone, is to be made a member of the Isthmian Canal Commission, will be received with satisfaction, not only by the public in general, but by the medical profession in particular.

It will be remembered that at the time the organization of the original commission was pending, now more than three years ago, Dr. Gorgas was urged for appointment as a member of that body by the entire medical profession. The movement was conducted by Dr. Charles A. L. Reed, of Cincinnati, as chairman of the Legislative Committee of the American Medical Association, and was based on the contention that sanitation, being of fundamental importance on the Isthmus, it ought not to be given a subordinate position, but was entitled to the privilege of protecting its own interests by actual representation on the executive commission.

The application was ignored by the President, who, however, compromised by appointing Dr. Gorgas as Chief Sanitary Officer, "under the direction of the Governor of the Zone, who was under the direction of a special committee of the commission, which was under the direction of the commission itself, which was under the direction of the Secretary of War, who was under the direction of the President"—precisely the condition against which practically every physician in America had been protesting. But the President mentioned sanitation as being worthy of attention when he assembled the seven commissioners, whom he did select and whom he told then and there that he would dismiss if their services did not prove to the highest interest of the enterprise.

It so happened, a year or so later, that Dr. Reed was asked by the Government to go to the Isthmus on some business not connected with sanitation. On his return he made his formal report, and was about to take his departure, when he was asked, as a matter of courtesy, to make a statement of conditions in general, particularly in relation to sanitation, as he had observed it in progress. He complied with the request and told in very plain language just what he had seen. Names, dates and places, with detailed circumstances, were given with a freedom and precision foreign to the circumlocution methods usually employed in government reports. He gave instances showing how the sanitary administration was being hampered by superior officers, who turned down requisitions for necessary supplies; how important policies formulated by Dr. Gorgas were being embarrassed by the bumptious meddlesomeness of the same superiors; how the work in detail was encumbered by a marvelous complexity of red tape. He suggested remedies for each condition, and showed how the commission had been responsible for many blunders. Then he proceeded to quote the President's own language and to call on him to keep his word by demanding the resignations of the commissioners. Then, proceeding on the theory that his statement was not an official report, and, having the courage to stand for what he said, Dr. Reed gave it to the country.

The revelation startled everybody, but probably nobody more than President Roosevelt himself, who proceeded to reprimand Dr. Reed for having taken the public, as well as the administration, into his confidence. The publication was denounced as an "impropriety" and the report itself as being "controversial."

No sooner was the reprimand issued, however, than President Roosevelt demanded the resignation of the commissioners; Colonel Gorgas was given a free hand in ordering supplies; transportation was accelerated; supervision by bumptious "superiors", who were ignorant of sanitary problems, was interdicted, and the red tape was cut away with delightful celerity—in short, everything that Dr. Reed had recommended was promptly granted, even to details. Now, after two years, it seems that the last point in the "controversy" has been conceded by the appointment of Dr. Gorgas as a member of the commission.

If it is indeed true that Dr. Reed has been engaged in a controversy during all of this time, it would seem that he has been reasonably successful.

Marriages

FRANK P. LORD, M.D., to Miss Wood, both of Athens, Ohio, December 26.

MILTON L. MARTIN, M.D., to Miss Alsie Forrester, both of Denton, Texas, December 24.

HENRY G. RADCLIFFE, M.D., to Mrs. Annie G. Lohmiller, at Liberty, Md., December 20.

ROLANDO KUEHN, M.D., to Miss Ida May Miller, both of Philadelphia, Oct. 15, 1906.

JOHN WOOD MARCHILDON, M.D., to Miss Frances Gerber, both of St. Louis, December 24.

CARL BITTER, M.D., St. Charles, Mo., to Mrs. H. H. Vinke of Davenport, Iowa, December 25.

JOSEPH E. MORR, M.D., Orland, Ind., to Miss Mary Moore of Kendallville, Ind., December 28.

ELMER A. ELDER, M.D., Pueblo, Colo., to Miss Florence Gray of Cincinnati, Ohio, December 25.

SHIRLEY D. BARRY, M.D., Mercur, Utah, to Miss Frances B. Mills of Tacoma, Wash., recently.

CHARLES T. WALL, M.D., Washington, Ind., to Miss Minnie Murphy, at Louisvile, Ky., December 22.

WILLIAM HENRY MINCHNER, M.D., Troy, Ala., to Miss Alice Kate Parlette, at Baltimore, December 25.

JAMES WILLIAM WOOD, M.D., Oak Lawn, Pa., to Miss Sara Crosby Black of Chester, Pa., December 27.

LEONARD J. TURLINGTON, M.D., Baltimore, to Miss Carrie B. Tittle of Washington, D. C., December 23.

HALFORD A. WATSON, M.D., Chicago, to Miss Mary Virginia Hagermann of Lexington, Ky., December 29.

MARSHALL C. TWITCHELL, M.D., to Miss Mary Vaughn Buell, both of Burlington, Vt., December 27.

DONARELL RHEA GREEN, M.D., to Miss Harrietta Margaret Landrum, both of Atlanta, Ga., December 26.

MARY E. PARKER, M.D., Portland, Ore., to James T. White of Bridgeport, Cal., at Reno, Nev., December 19.

WILLIAM B. WHERRY, M.D., River Forest, Ill., to MARIE ELEANOR NAST, M.D., at Cincinnati, December 29.

CHARLES W. KOLLOCK, M.D., Charleston, S. C., to Miss Sara Elizabeth Irvin of Washington, Ga., December 11.

WILLIAM C. BARKER, M.D., Alma, Neb., to Miss Grace Clarissa Sturdevant of Tecumseh, Neb., December 26.

WILLIAM ELBERT BURT, M.D., Row Landing, La., to Miss Jessie Erma Hicks of Talladega, Ala., December 27.

LEO HAROLD JOYCE, M.D., Passaic, N. J., to Miss Margaret Ce Celia Kennedy of Waterbury, Conn., November 27.

CHARLES HENRY A. STELLING, M.D., Wheatland, Iowa, to Miss Lillian Mae Meyer of Iowa City, Iowa, December 25.

J. HENRY CARVER, M.D., New York City, to Miss Marguerite Lafeuille of Paris, France, in New York City, December 24.

EDWARD WHARTON SPRAGUE, M.D., Newark, N. J., to Miss Harriett Thorne Newman of Jersey City, N. J., December 27.

SAMUEL C. SLOCUM, M.D., Portland, Ore., to Miss Virginia De Lano of Tacoma, Wash., at Harrisburg, Ore., December 15.

WILLIAM MARSHALL VARBLE, M.D., to Miss Dove Frances Myers, both of Jeffersonville, Ind., at Louisville, December 23.

GEORGE BENJAMIN GILMORE, M.D., Colorado City, Colo., to Miss Mary Chaplain Lawton, at Colorado Springs, Colo., December 25.

JOHN M. FRANKENBURGER, M.D., Kansas City, Mo., to Miss Otella Chandler of Pierce City, Mo., in Kansas City, Mo., December 24.

Deaths

Cyrus K. Bartlett, M.D. Harvard University Medical School, Boston, Mass., 1852; for a time assistant superintendent of the Northampton (Mass.) Insane Hospital; from 1868 to 1893 superintendent of St. Peter (Minn.) State Hospital for the Insane; from 1893 to 1905 professor of mental diseases in the Medical Department of Hamline University, Minneapolis, and then made professor emeritus; from 1897 to 1904 associate editor of the *Medical Dial;* a well-known alienist and frequent contributor to the literature of that subject, died at his home in Minneapolis, December 26, aged 77.

Jacob Lindemuth Ziegler, M.D. Jefferson Medical College, Philadelphia, 1844; twice president of the Lancaster County Medical Society; vice-president in 1879 and president in 1881 of the Medical Society of the State of Pennsylvania; one of the oldest practitioners of Lancaster County, Pa.; at one time burgess of Mount Joy borough, and a surgeon during the Civil War, died suddenly from cerebral hemorrhage at his home in Mount Joy, December 26, aged 84.

Frank Edwin Beckwith, M.D. College of Physicians and Surgeons in the City of New York, 1871; professor of obstetrics and diseases of women at Yale Medical School, New Haven, from 1880 to 1885; a member of the local county and state medical societies; director and for many years attending physician to the New Haven Hospital, died at his home in New Haven, December 27, from cerebral hemorrhage, after an illness of two days, aged 59.

Charles L. Culpeper, M.D. College of Physicians and Surgeons in the City of New York, 1885; supreme medical examiner of the Modern Puritans; supreme medical examiner for Virginia of the Royal Arcanum, and surgeon of the Norfolk & Portsmouth Traction Company, who had been in ill health for about two years, shot and killed himself in his office in Portsmouth, December 28, aged 43.

William Moore, M.D. Miami Medical College, Cincinnati, 1857; a member of the American Medical Association; for many years a member of the Columbiana County board of visitors, and one of the oldest practitioners of Columbiana County, died at his home in Lisbon, Ohio, December 24, from malignant disease of the stomach, after an illness of several years, aged 80.

Jeannette C. Welch, M.D. College of Physicians and Surgeons of Chicago, 1902; of Grand Rapids, Mich.; a member of the medical staff of the Union Benevolent Hospital Association; a member of the Grand Rapids Academy of Medicine and Kent County Medical Society; one of the organizers of the University Club, died at the U. B. A. Hospital, Grand Rapids, from tubercular meningitis, aged 39.

John N. Wright, M.D. Albany (N. Y.) Medical College, 1868; a veteran of the Civil War; a practitioner of Grand

Gorge, N. Y., for 36 years; five times coroner of Delaware County, and justice of the peace of the town, and postmaster during three administrations, died at his home, December 21, from asthma, from which he had suffered for many years, aged 66.

Charles **Griswold, M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; of North St. Paul, Minn.; a veteran of the Civil War; a member of the Minnesota legislature in 1865; died at the City Hospital, St. Paul, December 25, from senile debility, aged 74.

Lawrence **Smith, M.D.** Medical College of Georgia, Augusta, 1852; a surgeon in the Confederate service during the Civil War, and for more than half a century a practitioner of Cusseta, Ala., died at his home in that city, December 22, after an illness of 10 months.

Frank **H. De Camp, M.D.** New York Homeopathic Medical College and Hospital, New York City, 1892; formerly of Horseheads, N. Y., died at his home in Elmira, N. Y., December 22, from uremia, following pneumonia, after an illness of two weeks, aged 38.

William **C. Jones, M.D.** Bellevue Hospital Medical College, New York City, 1886; chief surgeon of the Texas Central Railway for nearly 20 years; a member of the American Medical Association, died at his home in Walnut Springs, Texas, December 26.

George **A. Garries, M.D.** Cleveland Medical College, Medical Department of Western Reserve College, 1881; a veteran of the Civil War; for many years a practitioner of Erie, Pa., died at his home in that city, December 25, after an illness of several weeks, aged 60.

Timothy **Huggins Bishop, M.D.** Medical Institution of Yale College, New Haven, Conn., 1860; for 25 years secretary and for a long time consulting physician to the New Haven Hospital, died at his home in New Haven, December 26, from pneumonia, aged 70.

Joseph **M. Fort, M.D.** Jefferson Medical College, Philadelphia, 1851; a prominent citizen of Paris, Texas, and for many years a member of the North Texas Medical Association, died at his home, December 21, after an illness of several years, aged 78.

Jacob **G. Wolf, M.D.** Medical College of Ohio, Cincinnati, 1849; a surgeon during the Civil War, died December 27 at his home in Morristown, Ind., where he had practiced for more than half a century, from pneumonia, aged 83.

Benjamin **F. Davis, M.D.** Starling Medical College, Columbus, Ohio, 1863; a veteran of the Civil War, and one of the oldest practitioners of Wood County, Ohio, died at his home in Tontogany, Ohio, December 19, aged 69.

Benjamin **F. Forrey, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1882; died at his home in Bath, Ind., December 26, from acute gastritis, after an illness of only a few hours, aged 46.

John **W. Franklin, M.D.** Kentucky School of Medicine, Louisville, 1865; one of the oldest practitioners of Coles County, Ill., died suddenly at his home in Diona, Ill., from rheumatism of the heart, December 19, aged 67.

George **W. Huebner, M.D.** Jefferson Medical College, Philadelphia, 1893; of Johnstown, Pa.; died at the home of his mother in Johnstown, December 21, from pneumonia, after an illness of four days, aged 40.

James **Henderson, M.D.** McGill University, Medical Department, Montreal, 1892; of Coborg, Ont.; while returning from a call on a sick patient, December 21, was struck by a train and instantly killed, aged 40.

Edward **S. Horner, M.D.** Medico-Chirurgical College of Philadelphia, 1899; died at his home in Turbotville, Pa., from the effects of an overdose of morphin taken to relieve neuralgia, December 21, aged 40.

John **W. Younge, M.D.** Medical College of Fort Wayne, Ind., 1879; a veteran of the Civil War, died at his home in Fort Wayne, December 31, from nephritis, after an illness of two weeks, aged 66.

James **E. Price, M.D.** Medical Department of the University of Tennessee, Nashville, 1899; died at his home in Priceville, Ala., December 20, from dropsy, after an illness of several months, aged 45.

Columbus **Richards Giles, M.D.** Kansas City Hospital College of Medicine, Kansas City, Mo., 1885; died at his home in Atlanta, Ga., after an illness of six weeks, December 26, aged 58.

James **W. Standley, M.D.** Rush Medical College, Chicago, 1872; died at his home in Alexis, Ill., December 23, from angina pectoris, after an illness of two weeks, aged 48.

Isaac **Benson Ennis, M.D.** Kentucky School of Medicine, Louisville, Ky., 1893; died at his home in Chebanse, Ill., December 25, after an illness of 10 days, aged 36.

W. **Clemmit Williams, M.D.** University College of Medicine, Richmond, Va., 1897; of Scottsville, Va., died December 23, and was buried in Richmond, December 25.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of December, 1906:

ALABAMA.

Bell, A. W., Woodlawn.
Garrison, J. E., Quinton.
James, A. D., York.
Tam, Silas S., Mobile.

ARKANSAS.

Brewer, John F., Kerrs.
Frey, J. J., Park Place.
Garner, T. J., Washington.
Horner, Joseph Smith, Hot Springs.
Leali, Chas., Kingsland.
Morrow, J. J., Cotter.

CALIFORNIA.

Bailey, F. J., Red Bluff.
Gordon, Frank H., Los Angeles.
Spencer, J. F., Gardena
Taylor, Oscar N., San Francisco.
Teubner, Charles, Saticoy.

COLORADO.

Barney, Lucius, Denver.
McGiffin, M. N., Denver.
Roosevelt, G. F., Denver.
Thorp, R. L., Denver.
Upson, Wilbur O., Fort Collins.

CONNECTICUT.

Brainard, I. E., Wallingford.
Deles-Derniers, H. W., Meriden.
O'Loughlin, T. F., Rockville.
Winship, E. O., Rockville.

FLORIDA.

Boring, J. M., Waldo.

GEORGIA.

Shields, J. A., Villanow.

IDAHO.

Shawhan, Glenn E., Boise.
Woodburn, John M., Boise.

ILLINOIS.

Asay, J. E., Rock Island.
Boynton, L. V., Vermont.
Carr, O. N., Verona.
DeRoulet, Alfred, Chicago.
Dixon, W. A., Decatur.
Dollear, A. H., Watertown.
Dunn, B. B., Perry.
Evinger, J. W., Paris.
Griffith, B. A., Swan Creek.
Hansen, O. A., Chicago.
Knewitz, O. W., E. St. Louis.
Leach, R. B., Joliet.
Millard, H. A., Minonk.
Napheys, W. D., Jr., Chicago.
O'Brien, C. L., Chicago.
Renwick, J. C., Warren.
Rosenblumm, S. M., Chicago.
Rosenstiel, Mary L., Freeport.
Steely, Geo., Danville.
Stockdale, Frank A., Coal City.
Stolp, Rufus B., Kenilworth.
Tremblay, J. J., Moline.
Vandervort, Franklin C., Bloomington.
Wynekoop, G. H., Chicago.
Young, C. S., Genesee.

INDIANA.

Bowles, H. S., Muncie.
Hyde, L. A., Linton.
Rothchild, C. J., Fort Wayne.
Suverkrup, L. A., Columbus.

INDIAN TERRITORY.

Cagle, T. J., Wetumka.
Tye, R. P., Chickasha.
Williams, H. E., McAlester.

IOWA.

Cover, O. A., Seymour.
Donahue, Julia M., Burlington.
Driver, F. J., Shenandoah.
Frisbie, C. B., Des Moines.
Green, W. H., Farnhamville.
Hills, H. M., Denmark.
Huckins, H. S., Dallas Center.
Milligan, W. W., Burlington.

KANSAS.

Blewett, W. F., Caney.
Buckles, J. H., W. Mineral.
Bushong, L. B., Admire.
Haskins, H. E., Kingman.
Haynes, W. A., Sabetha.
Hoover, W. F., Climax.
Horner, R. C., Green.
Horner, T. E., Severance.
Kanavel, E. J., Sedgwick.
Maddox, C. W., Longton.
May, A. J., New Cambria.
McDonald, S. F., Severy.
Metcalf, E. T., Colony.
Palmer, J. A., Erie.
Smith, J. C., Greeley.

KENTUCKY.

Blair, A. L., Morehead.
Flexner, J. A., Louisville.
Francis, W. A., Bowling Green.
Henry, O. C., Sylvandell.
Matthews, J. E., Westview.
Scaggs, Alex., Morehead.
Smith, H. A., Paducah.

LOUISIANA.

Gardiner, C. A., Sunset.
Smith, H. H., Cotton Valley.

MARYLAND.

Spragins, Melchijah, Baltimore.
Tyndall, I. C., Whaleyville.

MASSACHUSETTS.

Abbott, H. D., Danvers.
Bonnar, J. M., New Bedford.
Borden, G. E., Fall River.
Brindisi, R., Boston.
Crane, C. C., Norwood.
Easton, C. D., Boston.
Field, H. M., Norwood.
Fox, Horace, Bath.
Holmes, G. W., Boston.
Hosley, W. A., Newton.
Johnson, F. W., Boston.
Leary, Timothy, Boston.
Ober, Marion Helena, Wellesley.
O'Brien, T. J., Boston.
O'Brien, D. P., New Bedford.
Rockwell, G. E. P., Worcester.
Thayer, N. P., Boston.

MICHIGAN.

Bailey, E. H., Corunna.
Gardner, C. B., Riverdale.
Goodfellow, Abram, Clio.
Kelley, E. W., Temperance.
Nelson, Andrew, Escanaba.
Scott, T. B. H., Owosso.
Wolford, C. T., Grand Rapids.

MINNESOTA.

Bomberger, F. J., Mapleton.
Brooks, G. F., Stevenson.
Campbell, E. P., St. Paul.
Casseday, F. F., Rosemount.
Chambers, W. C., Owatonna.
Chase, E. F., Adams.
Froehlich, H. W., Pine City.
Henderson, Andrew, Scanlon.
Lalonde, Edmond, Torah.
Millet, M. C., Rochester.
Owre, Oscar, Minneapolis.

MISSISSIPPI.

Brown, P. R., West Point.
Clark, J. A., Ruleville.
Dye, T. M., Sherard.
Horton, W. H., Bogue Chitto.
Hunt, D. R., Myrick.
McDevitt, J. A., Shubuta.
Turrentine, A. E., Chancy.

MISSOURI.
Alexander, G. W., Chula.
Baird, W. C., Bogard.
Baker, W. L., Salisbury.
Bradley, U. S., Harris.
Brunner, E. E., Carrollton.
Burch, E J., Doerun.
Callihan, R. G., Luray.
Cochran, F. B., Brookfield.
Duffie, W. M., Millard.
Durham, U. S., Clarence.
Ewing, E. W., Modena.
Foster, G. F., Memphis.
Greene, Luther D., Richmond.
Herington, Warner, Green City.
Hinch, F. E., Ste. Genevieve.
Holliday, J. W., Tarkio.
Holliday, S. J., Pollock.
Johnson, G. A., Holliday.
Jurgens, L. C., Kirksville.
Kenney, W. L., St. Joe.
Kimberlin, J. W., Kansas City.
Lanning, R. W., Ste. Genevieve.
Lawrence, W. S., St. Louis.
Munn, W. E., Pure Air.
Norman, J. B., California.
Pickett, C. P., Mercer.
Poole, A. R., Milan.
Polson, J. T., Laclede.
Roberts, I. M., Green City.
Robinson, J. L., Kansas City.
Sheldon, Samuel, Trenton.
Simpson, A. J., Chillicothe.
Shepler, R. H., Green City.
Smith, A. A., Pacific.
Taylor, W. L., Greencastle.
Tidwell, G. W., De Soto.
Topping, M. H., Flat River.
Tull, H. W., Carrollton.
Van Hoefen, S. A., St. Louis.
Wallace, G. R., Bertrand.
Wiegers, T. L., Flint Hill.
Williams, D. B., Osceola.
Wright, J. B., Trenton.

NEBRASKA.
Ireland, G. A., St. Edward.
Morris, G. H., Creston.
Neal, W. T., Nebraska City.

NEVADA.
Bowen, F. P., Rhyolite.
Harper, T. H., Silver Peak.

NEW HAMPSHIRE.
Chesley, A. P., Concord.
Keay, F. L., Rochester.

NEW JERSEY.
Cobb, G. H., South Orange.
Hance, I. H., Lakewood.
Langdon, R. M., Englewood Cliffs.
Mander, A. J., Millville.
McVay, J. C. F., Atlantic City.
Muta, S. A., West Orange.
Rosensohn, William, East Orange.
Runyan, Mefford, South Orange.
Scheppach, H. A., Newark.
Van Syckle, A. C., Hackettstown.

NEW YORK.
Bates, G. W., Schenectady.
Bond, G. F. M., Yonkers.
Brown, C. Anna J., Seneca Falls.
Combes, Frank, New York.
Dillon, William, Brooklyn.
Eiseline, D. A., Shortsville.
Finch, L. H., Broadalbin.
Gillespie, D. H. M., New York.
Goodall, H. S., Lake Kushaqua.
Haskin, W. H., New York.
Healy, W. P., New York.
Hinkel, F. W., Buffalo.
Hogan, D. D., Ft. Schuyler.
Hoole, L. P., Brooklyn.
Ives, R. F., Brooklyn.
Knisley, A. B., Buffalo.
McGrath, W. J., Rotterdam Junction.
McMurtry, C. W., New York.
Packard, Maurice, New York.
Quigley, J. K., Rochester.
O'Meara, Mark, Kingston.
Ressequie, F. J., Saratoga Springs.
Rice, F. C., Ripley.
Roberts, C. S., Syracuse.
Rouse, J. B., Leeds.
Shields, N. J., New York.
Taggert, J. A., Salamanca.
Williams, H. U., Buffalo.
Zimmer, F. W., Rochester.

NORTH CAROLINA.
Anderson, T. E., Statesville.
Chapin, H. T., Pittsboro.
Meadows, N. J., Greensboro.
Pope, H. T., Lumberton.
Street, M. E., Glendon.
Taylor, W. L., Stovall.
Wilson, F. G., Gastonia.

NORTH DAKOTA.
Stribling, J. W., Jamestown.

OHIO.
Christy, S. K., Willshire.
Gaver, E. E., Columbus.
Heyn, L. G., Cincinnati.

OKLAHOMA.
Bell, Allen, Maud.
Pierson, O. A., Woodward.

OREGON.
Koljonan, Heikki, Astoria.
Roth, J. B., Portland.
Williams, C. L., Junction City.

PENNSYLVANIA.
Alburger, H. R., Philadelphia.
Deckard, P. E., Harrisburg.
Delber, H. W., Wilkesbarre.
Dougherty, E. S., Ashley.
Down, H. C., Dalton.
Fretz, A. E., Sellersville.
Grimes, R. B., Philadelphia.
Merrill, B. E., Dents Run.
Miller, J. B., Sligo.
Pike, C. P., Philadelphia.
Plymire, I. S., Doylestown.
Register, H. C., Philadelphia.
Schill, J. J., Pittsburgh.
Walker, James, Mendenhall.
Walker, R. A., West Monterey.
Wenzel, Mary, Philadelphia.
White, J. N., Scranton.

RHODE ISLAND.
Brackett, E. S., Providence.

SOUTH CAROLINA.
Henslee, C., Dillon.
Kell, T. B., Fort Lawn.
Woodruff, W. A., Cateechee.

SOUTH DAKOTA.
Haberman, Emil, Bancroft.
Johnston, M. C., Aberdeen.

TENNESSEE.
Alexander, L. L., Paris.
Brower, Chas., Nashville.
Cobleigh, C. A., Chattanooga.
Graham, W. W., Arno.
Mooney, C. F., Knoxville.
Nelson, J. E., Briceville.
Porter, W. W., Springfield.
Sifford, W. R., Nashville.
West, W. J., Knoxville.

TEXAS.
Boyd, D. T., Bonham.
Coffey, A., Ft. Worth.
Davies, R. P., Petty.
Feemster, M. B., Omega.
Foscue, G. B., Waco.
Shepperd, F. D., Liberty Hill.
Trott, G. A., Georgetown.

UTAH.
Anderson, Ross, Salt Lake City.
Behle, A. C., Salt Lake City.
Laker, L. B., Eureka.
Morton, J. E., Heber City.

VERMONT.
Lazell, W. E., Barre.

VIRGINIA.
Grice, Jos., Portsmouth.
Lyell, R. O., Warsaw.
McCaw, David, Richmond.
Seward, W. W., Surry.
Storie, J. G., Hurley.

WASHINGTON.
Boyd, G. T., Palouse.
Buchanan, C. M., Tulalip Indian Agency.
Stone, D. M., Black Diamond.
Stryker, R. S., Ridgefield.
Vail, H. D., Quincy.

WEST VIRGINIA.
Wyatt, G. L., White Silver Springs.

WISCONSIN.
Baasen, J. M., Mt. Calvary.
Cottington, Robert, Bloomer.
Hill, W. B., Milwaukee.
Hinman, F. L., Rhinelander.
Hughes, T. H., Dodgeville.
Johnson, W. H., Mattoon.
Lee, J. H., Iola.
Pomainville, G. J., Waumandee.
Pretts, W. W., Platteville.
Rogers, A. W., Milwaukee.
Toby, E. A., River Falls.

WYOMING.
Cooper, A. H., Superior.

FOREIGN.
Flannagan, L. E., Nicaragua, C. A.
Grant, A. F., Assiout, Egypt.

Queries and Minor Notes

TREATMENT OF TUBERCULAR ADENITIS.

ADIN, CAL., Dec. 14, 1906.

To the Editor:—I desire information on the treatment of tubercular adenitis of the cervical glands. I have a patient, male, aged 27, American-born Portuguese, who has enlarged glands, which were first noticed at the age of 14. Aside from this condition there is no better man physically in northern California. He has had eight operations on the neck, the first at the age of 15. The first four operations removed all the glands on the left side of the neck; then glands on the right side began to enlarge. He has had four operations on that side, the last two of which I performed. Last April I removed a tumor the size of a large lemon, which was attached to the inferior maxillary for one and a half inches, to floor of the mouth, root of the tongue, and larynx, surrounded the internal and external carotids and extended down to midway between the jaw and the clavicle. It required 52 ligatures and one pair of artery forceps to control the hemorrhage. Knowing the case to be tuberculous, I left the wound open at the lower half and packed with 10 per cent. iodoform gauze. It healed rapidly and kindly. In September the man noticed two small lumps at the border of the sterno-cleidomastoid, about one-half inch below the lower angle of the first incision. These lumps enlarged rapidly, and on September 11, I removed them, leaving the wound open and packing it with iodoform and iodoform gauze 5 per cent. I have been giving internally, calcium chlorid and sulphid, cod liver oil, etc.

I saw in the last volume of the Year-Book an article on the use of 30 per cent. iodoform emulsion, hypodermatically. Can it be recommended? If so, what kind of syringe should be used, how often should it be injected, in what part of body and what doses. There is tuberculous adenitis on the mother's side, the father's side, so far as they know, is healthy; brothers and sisters are all alive and healthy. The man's mother died two years ago with pneumonia, so far as known he has, on the mother's side, four cousins, affected like himself, two in one family and one each in two other families. The patient has been treated by at least ten different physicians and has taken medicine by mouth the greater part of the time since he was fourteen years old. Any information from those who are competent to give it on such a condition will be gladly received. C. M. TINSMAN.

ANSWER.—The surgical removal of tuberculous lymphatic glands appears to be successful under two conditions: First, when the focus of the disease is completely removed in a subject with good resisting powers and no germs are left behind to cause a renewal of tuberculous formation; second, when the operation sets free a moderate amount of tuberculous toxin which is followed by such a reaction on the part of the system that healing of the remaining tuberculous foci occurs from the bactericidal action of the system. When these conditions are lacking it is possible that surgical interference may contribute to the spread of the disease by scattering the bacilli. Healing of the tuberculous lesion requires the existence in the blood of bactericidal and antitoxic power and the free circulation of such blood through the diseased part. Local methods of treatment have as their basic principle the excitation of hyperemia in the part which is the seat of the disease. For such purpose the injection of iodoform emulsion is well suited. Probably the passive congestion method of Bier might be found serviceable. Other applications, such as iodin, serve the same purpose. This treatment will be of no avail, and may be harmful so long as the blood is lacking in bactericidal power, that is, when the opsonic index is low. General measures of treatment are serviceable by increasing this power in the blood. For this purpose ordinary hygienic measures, fresh air, particularly sea air, good food, largely albuminous, etc., are especially to be recommended. The presence of bactericidal power in the blood may be ascertained by determining the opsonic index according to the method of Wright. If this is found to be below normal, local measures or surgical intervention are risky and are likely to fail on account of the lack of bactericidal power in the blood. If the opsonic index is normal or above it would indicate that no general measures other than ordinary hygiene are demanded. If the opsonic index is too low attempts may be made to raise it by the cautious administration of tuberculin, a decided reaction being carefully avoided.

THE USE AND ABUSE OF ADRENALIN.

FALLS CITY, TEXAS, Dec. 20, 1906.

To the Editor:—Two articles of recent appearance in THE JOURNAL, when taken together, are significant with a lesson. Cases of rattlesnake bite are very frequent in this section, and the treatment, invariably successful, when the patient is seen within a few hours after the bite, is the same in every detail as that outlined by Dr. Lewis in THE JOURNAL A. M. A., Dec. 15, 1906, p. 2012, with the exception, as far as I know *that the adrenalin is never given!* Now take the case of Dr. Bennett in THE JOURNAL, Nov. 17, 1906, page 1655. It seems in his case that 30 minims of adrenalin nearly killed a strong adult in good condition, who was apparently saved by the timely use of morphin, atropin, nitro-

glycerin, etc. Dr. Lewis' case, referred to above, was only a child of 14, and suffering from snake poison. He got 25 minims of adrenalin the same strength as that used in the other case. Note the similarity of some of the symptoms in the two cases. After the boy had improved he got worse again. It is open to question if the adrenalin was not responsible for the loss of the snake bite case. At least, why use the adrenalin when the treatment as detailed is successful and satisfactory without it?

G. W. SIMS, M.D.

ANSWER.—The question raised by our correspondent is pertinent. Theoretically adrenalin may be given in snake poisoning for two reasons: First, for its local effect in delaying the absorption of the poison; second, to counteract the tendency to falling blood pressure in consequence of the general poisoning. In Dr. Lewis' case it was apparently used for the latter purpose. Considering the uncertain action of this substance it might be wiser to resort to better known vasoconstrictors. From the history, however, it does not appear that Dr. Lewis' patient exhibited any of the symptoms of adrenalin poisoning shown in the case related by Dr. Bennett. The patient held his own for two hours and died apparently from the toxic action of the snake venom.

STATUS OF SCOPOLAMIN-MORPHIN ANESTHESIA.

DEESON, MISS., Dec. 21, 1906.

To the Editor:—Will you kindly give the status of scopolamin anesthesia? In the last edition of Wood's Therapeutics it is stated that from the reports of nearly 2,000 cases collected by H. C. Wood, Jr., the mortality was 9, or 1 in 221; and that in 69 per cent. of the cases ether or chloroform had to be given to complete the operation. In this work this method of producing anesthesia as a routine measure is very strongly condemned. In THE JOURNAL, Aug. 25, 1906, advertising page 25, appears an advertisement of the Abbott Alkaloidal Co., in which the morphin-scopolamin method of producing anesthesia is extolled in extravagant and alluring language, making use of the following expressions: "Painless surgical practice without chloroform or ether and without nausea or post-operative emesis accomplished with hyoscin-morphin and cactin comp. (A.A.Co.). No anesthetist required. Not one failure or unpleasant symptom has been reported. It is a powerful and efficient combination, and is indicated in major surgical and gynecological operations in lieu of the common general anesthetics." No one but a country physician, practicing in sections remote from efficient aid, can appreciate the enticing persuasions of this advertisement. Either Prof. Wood is in error or the alkaloidal people are in error. I am all at sea, because, living among our "colored brethren" as I do, my emergency work at this season of the year is considerable; and if I could feel safe in the employment of this method it would indeed be a great boon.

THOMAS J. RAY.

ANSWER.—This letter was submitted to Dr. Wood, who made the following reply:

"While it is not flattering to a pharmacologist to have his conclusions called in question on account of the extravagant language of the advertisements of drug manufacturers, as the question is one of some importance I am pleased to have an opportunity of re-asserting my convictions as to the danger of scopolamin-morphin anesthesia, and the reasons for my belief. In the first place, it must be remembered that scopolamin is simply a new name for hyoscin. It has been asserted that although there is no chemical distinction between the two alkaloids they are obtained from different plants. This, however, is a mistake. The definition of the U. S. Pharmacopeia admits of either hyoscin or scopolamin being made from any plant belonging to the family of *Solanaceæ*, provided it answers to certain chemical tests, which tests are precisely the same for scopolamin as for hyoscin. The German Pharmacopeia no longer recognizes the name of hyoscin. The recognition of the two names for one substance by the U. S. Pharmacopeia is unfortunate, as likely to lead to confusion. If the physician who is meditating the comparative value of the hypodermic anesthesia will bear in mind that the two agencies employed are morphin and hyoscin he will be able to gauge the effect which may be expected. Hyoscin has practically no power as an analgesic, and differs from the other mydriatic alkaloids in being depressant and not stimulant to the respiratory center. The addition of hyoscin to the morphin, therefore, can not greatly increase the insensibility to pain, but must distinctly augment the liability to respiratory failure.

"The statement quoted that: 'Not one failure or unpleasant symptom has been reported,' is separated from falsehood only by the width of the advertiser's license. In *American Medicine*, 1906, page 546, I have considered in some detail the reported cases in which this method of anesthesia has been employed. In 1988 cases there were reported 23 deaths, of which after careful study of the original records at least 9 seem to me may be fairly attributable to the anesthetic. There were also 868 cases in which the anesthesia was unsatisfactory, and in a number of cases besides these no attempt was made to produce complete anesthesia without the use of ether or chloroform. There is little room for doubt that the previous hypodermic administration of morphin will lessen the quantity of ether or chloroform necessary to produce anesthesia, and in many cases also lessen the unpleasant symptoms of the anesthesia; but that the danger of the narcosis is in any way diminished by this practice I think is exceedingly questionable, and the admission of sufficient quantity of morphin to produce complete anesthesia under ordinary circumstances seems to me inadmissible. The rôle of the hyoscin or scopolamin in the anesthesia is entirely subsidiary to that of the morphin. When one considers that in 2,000 cases of this form of anesthesia 9 deaths have occurred and compares these figures to 1 death in 16,000 for ether he will hardly dare weigh the question of convenience against this frightful mortality."

DISINFECTION BY FORMALDEHYD.

MUSKOGEE, I. T., Dec. 14, 1906.

To the Editor:—Please state the best method of disinfecting rooms after scarlet fever. Please also give the proportions and quantities of formaldehyd and solution of permanganate of potash for 1,000 cubic feet of air space.

J. W.

ANSWER.—For each 1,000 cubic feet of air space five or six ounces of crystals of potassium permanganate should be placed in the container. Over it should be poured one pint of 40 per cent. solution of formaldehyd. The air in the room must be moistened, or disinfection will not be complete. The air may be moistened by wet sheets, hung about the room, before the disinfection takes place. This method of disinfecting was described in THE JOURNAL, July 14, 1906, page 139. In a letter published July 28, page 288, Dr. Henry Albert, Iowa City, Iowa, discusses the proportions of the ingredients, a subject which he further takes up in a recent issue of the *Iowa Health Bulletin*. Dr. James A. Egan, Springfield, Illinois, discusses the matter further, August 18, page 523. A report of a detailed comparison of the various means of disinfecting was reviewed in THE JOURNAL, September 22, page 952. The objection most commonly raised against formaldehyd as a disinfectant is that it has little or no penetrating power. In the experiments of the Illinois State Board of Health, however, it has been shown that when the gas is generated by the formaldehyd-permanganate method this objection does not hold. It destroyed micro-organisms through four layers of flannel and two layers of sheets, but the disinfection failed when cultures were enclosed between the leaves of books and was not satisfactory when placed beneath a carpet. The inside of a closed drawer was disinfected, even though it was a dead space, there being no artificial means of putting the air in motion. To ensure penetration the gas should be generated in an approved manner so as to secure a large volume of gas and a long exposure. Some experiments made in the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service indicate that the effectiveness of formaldehyd depends largely on the temperature and the degree of humidity. The experimenter, T. B. McClintic, concludes that this gas is not to be relied on if the temperature is below 60 degrees F, and if the relative humidity of the atmosphere is less than 65 per cent. The *Bulletin of the Illinois State Board of Health* (November-December, 1906) criticises these conclusions on the ground that the apparatus used was not the best, the pail having straight sides instead of a flaring top and not being covered with asbestos, the amount of gas evolved being too small and being allowed to escape, as the room was not sealed. Experiments instituted by the Illinois board showed that the disinfection can be made effective in cold and dry weather by attending to these details.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 5, 1907:

Raymond, Henry I., surgeon, left Columbus Barracks, Ohio, with recruits en route to Vancouver Barracks, Washington.

Hall, James F., asst.-surgeon, granted thirty days' leave of absence about Dec. 26, 1906.

Huggins, John B., asst.-surgeon, ordered to proceed from San Francisco, Cal., to Washington Barracks, D. C., and report to the commanding officer of the Army General Hospital at that post, for assignment to duty with Co. C, Hospital Corps.

Ekwurzel, Geo. M., asst.-surgeon; relieved from duty at Fort Keogh, Montana, and ordered to Fort Meade, S. D., for duty.

Hansell, H. S., asst.-surgeon, reports arrival in the United States on three months' leave of absence.

Lyster, Theo. C., asst.-surgeon, left Ancon, Canal Zone, on special leave of absence.

Morris, Samuel J., asst.-surgeon, leave of absence extended to include Jan. 15, 1907.

Heard, Geo. P., asst.-surgeon, leave of absence extended one month.

Lyster, Wm. J. L., asst.-surgeon, leave of absence extended four days.

Wing, Franklin F., dental surgeon, left Fort D. A. Russell, Wyo., on leave of absence for one month.

Wolven, F. Homer, dental surgeon, left Fort Monroe, Va., on leave of absence.

Jackson, Thomas W., contract surgeon, ordered from Philadelphia, to Manila, P. I., for Philippine service.

Hereford, John R., contract surgeon, relieved from treatment at Hot Springs, Ark., and further duty at Fort Moultrie, S. C.; ordered to Fort McPherson, Ga., for duty.

Allen, Ira A., contract surgeon, granted an extension of one month to his sick leave of absence.

Leeper, John F., contract surgeon, granted leave of absence for ten days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 5, 1907:

Wright, B. L., surgeon, when discharged from treatment at the Naval Hospital, New York, N. Y., ordered to treatment at the Naval Hospital, New Fort Lyon, Colo.

Field, J. G., surgeon, detached from duty at the Naval Hospital, New Fort Lyon, Colo., and ordered to duty with the Marine Recruiting Party, Dallas, Texas.

Hart, G. G., acting asst.-surgeon, detached from duty with Marine Recruiting Party, Dallas, Texas, and ordered to the Naval Training Station, San Francisco.

Marshall, E. R., asst.-surgeon, detached from the Naval Station, Guantanamo, Cuba, and from duty on the *Monongahela*, and resignation accepted, to take effect Jan. 11, 1907.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 2, 1907:

Williams, L. L., surgeon, directed to proceed to Baltimore local quarantine stations for special duty, on completion of which to rejoin station.

Oakley, J. H., P. A. surgeon, leave of absence granted Dec. 13, 1906, for three days, revoked.

Wickes, H. W., P. A. surgeon, granted leave of absence for two days under Paragraph 191 of the Service Regulations.

Anderson, J. F., P. A. surgeon, directed to proceed to Reedy Island Quarantine for special temporary duty, on completion of which to rejoin station.

Robinson, D. E., P. A. surgeon, relieved from duty on Revenue Cutter *Manning* and directed to proceed to San Francisco, reporting arrival by wire.

King, W. W., P. A. surgeon, granted leave of absence for ten days from Dec. 17, 1906, on account of sickness.

Fox, Carroll, P. A. Surgeon, relieved from duty in the Philippine Islands, and directed to proceed to San Francisco, reporting arrival by wire.

Fox, Carroll, P. A. Surgeon, granted leave of absence for fourteen days en route to United States.

Glover, M. W., P. A. surgeon, granted leave of absence for one month from Jan. 12, 1907.

Long, J. D., P. A. surgeon, directed to report to medical officer in command, San Francisco, for temporary duty and assignment to quarters.

McKeon, F. H., asst.-surgeon, relieved from duty at San Francisco, and directed to proceed to Manila, P. I., reporting to chief quarantine officer for duty.

Frost, W. H., asst.-surgeon, granted leave of absence for five days from Dec. 22, 1906.

Hunter, W. R., acting asst.-surgeon, granted leave of absence for three days, from Dec. 31, 1906.

McCormac, J. T., acting asst.-surgeon, granted leave of absence for thirty days from Jan. 10, 1906.

Rodman, J. C., acting asst.-surgeon, granted seven days leave from Dec. 28, 1906.

Royster, W. L., acting asst.-surgeon, granted leave of absence for three days from Dec. 25, 1906, under Paragraph 210 of the Service Regulations.

Brinckerhoff, W. R., director, Leprosy Hospital, Honolulu, granted leave of absence for thirty days from Jan. 1, 1907.

Brown, F. L., pharmacist, granted leave of absence for twenty days from Jan. 4, 1906.

Goodman, F. S., pharmacist, granted leave of absence for four days from Dec. 25, 1906, under Paragraph 210 of the Service Regulations.

Miller, Charles, pharmacist, granted leave of absence for seven days from Dec. 24, 1906, under Paragraph 210 of the Service Regulations.

Hall, L. P., pharmacist, granted leave of absence Dec. 11 and 19 under Paragraph 210 of the Service Regulations.

Thomas, A. M., pharmacist, granted leave of absence for six days from Dec. 21, 1906, under Paragraph 210 of the Service Regulations.

APPOINTMENTS.

Dr. Arthur H. Wise appointed an acting assistant surgeon for duty at Port Huron, Mich.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Jan. 4, 1907:

SMALLPOX—UNITED STATES.

California: San Francisco: Dec. 15-2, 1 case.
Illinois: Danville, Dec. 20-27, 1 case, imported; Galesburg, Dec. 15-22, 2 cases.
Indiana: Elkhart, Dec. 15-22, 1 case; Indianapolis, Dec. 16-30, 1 case, 1 death; South Bend, Dec. 15-29, 6 cases.
Kansas: Topeka, Dec. 15-22, 1 case.
Louisiana: New Orleans, Dec. 22-29, 4 cases; Shreveport, 2 cases.
Michigan: Detroit, Dec. 22-29, 11 cases.
New York: New York, Dec. 15-22, 6 cases.
North Carolina: Greensboro, Dec. 15-29, 2 cases.
Ohio: Toledo, Dec. 15-22, 1 case.
Washington: Spokane, Dec. 15-22, 4 cases.
Wisconsin: Appleton, Dec. 22-29, 1 case; La Crosse, Dec. 15-22, 1 case.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Nov. 18-25, 2 cases.
Canada: New Brunswick, Kent County, Dec. 16-22, present; Nova Scotia, Colchester County, present, Cumberland County, present.
Chile: Coquimbo, Nov. 2-16, 23 cases, 1 death; Iquique, Nov. 22, present.
Ecuador: Guayaquil, Nov. 1-30, 36 deaths.
France: Paris, Dec. 8-15, 5 cases.
Great Britain: Cardiff, Dec. 9-15, 5 cases, imported; Hull, Dec. 1-15, 7 cases, 3 deaths.
India: Calcutta, Nov. 10-24, 3 deaths; Madras, Nov. 10-30, 2 deaths.
Persia: Hamadan, Oct. 1-31, Kerman, Kersmanshah, Meshed, Shiraz, Teheran and vicinity, Yazd, present.
Russia: Moscow, Nov. 17-24, 1 death; Odessa, Dec. 8-15, 5 cases, 2 deaths.
Spain: Barcelona, Dec. 10-20, 5 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Nov. 18-25, 1 case.
Cuba: Habana, Dec. 31, 1 case.
Ecuador: Guayaquil, Nov. 1-30, 14 deaths.

CHOLERA.

India: Calcutta: Nov. 10-24, 159 deaths; Madras, Nov. 10-30, 5 deaths.

PLAGUE.

Brazil: Bahia, Nov. 10-17, 4 cases, 1 death; Rio de Janeiro, Nov. 18-25, 11 cases, 4 deaths; Sao Paulo, Nov. 11-18, 1 death.
Chile: Antofagasta, Nov. 22, 2 cases.
Egypt: Alexandria, Nov. 17, 6 cases, 2 deaths; Garbieh, 2 cases, 1 death; Guerga, Nov. 22-29, 25 cases, 11 deaths; Keneh, Nov. 29, 11 cases, 7 deaths; Nenchfieh, Nov. 30, 1 case, 1 death.
India: General, Nov. 3-17, 12,759 cases, 9,481 deaths; Bombay, Nov. 13-27, 27 deaths; Calcutta, Nov. 10-24, 33 deaths.
Peru: Catacaos, Oct. 19, 3 cases; Lima, 2 cases; Mollendo, 1 case; Trujillo, 9 cases.

Society Proceedings

COMING MEETING.

Med. Society of State of New York, Albany, Jan. 29, 1907.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, held at Baltimore, Dec. 11-13, 1906.

(*Continued from page 72.*)

Cholecystectomy; Indications and Some Sequelæ.

DR. I. S. STONE, Washington, D. C., said that cholecystectomy has become popular because cholecystotomy has frequently failed to cure patients with gallstone disease. An important question, therefore, naturally arises, Under what circumstances should the gall bladder be removed? This question can not be answered until the possibility of a definite knowledge of the hepatic and common ducts is considered, especially their patency and contents, and if they are the seat of an infection. Stone is convinced that however popular this operation has become, the bad results have not as yet been reported as generally as would appear desirable. Nearly all of those who favor cholecystectomy as an operation of choice agree to operate when the gall bladder has, by reason of trauma, infection or malignant disease, become either useless or dangerous. The Mayos perform a cholecystectomy when stones are lodged in the cystic duct, the removal of which would leave a permanent interference with drainage; when the disease is confined to the gall bladder, and when it is filled with any fluid which has undergone septic change; when the gall bladder has become greatly thickened or has lost its function, or is the seat of inflammation without stone in which the liver ducts are not involved, or in malignant disease. Nearly all authors practically agree with the Mayos.

The contraindications to cholecystectomy are not numerous, but are of great importance. All the authors agree on one point, namely, the propriety of leaving the gall bladder for drainage purposes in pancreatitis, especially the chronic interstitial variety. The same opinion is expressed by most authors regarding the propriety of leaving a gall bladder when a cholecystenterostomy may be needed, as in certain common duct obstructions.

Stone's experience with cholecystectomy has been satisfactory in some particulars, and he finds it especially useful in those cases where the gall bladder has been out of use for a long time. In contracted bladder with an open choledochus, in obstructions of the cystic duct, whether due to stone or other causes which have resulted in permanent alteration of either bladder or duct, he finds the very best indications which will assure perfect cure. In cholelithiasis he has had two unfortunate results, because stones continued to pass at intervals after the removal of the gall bladder.

DISCUSSION.

DR. ROBERT T. MORRIS believes that surgeons will get better results if they include all gallstone and cholecystitis cases under one heading, and call them cholecystitis cases and adhesion cases. Adhesions in the region of the gall bladder and bile ducts will produce the same symptoms as gallstones, whether gallstones are present or not. With increased experience he inclines more and more toward the complete removal of the gall bladder, for the reason that in many patients there is a chronic infection going on all the while.

DR. W. P. CARR, Washington, D. C., thinks surgeons should consider these cases more as instances of cholecystitis and the gallstones as incidental, because gallstones do not cause any symptoms until they produce cholecystitis or obstruction of the common bile duct. It is really a cholecystitis or an obstruction of the bile ducts that leads to the diagnosis of gallstones. He thinks that the gall bladder should be left unless there are positive indications for its removal.

DR. SAMUEL LLOYD, New York, said the possibility of an occlusion of the duodenal opening in gallstone cases is not infrequent. He has operated once for congenital closure of the opening from the ampulla of Vater into the duodenum. In a number of gallstone cases surgeons find a very much distended common duct, that is, the duct is distinctly larger than usual, and one should suspect occlusion at the ampulla of Vater, the stone coming down and acting as a ball-valve, pushing against the duodenal opening, producing an inflammatory condition, and finally contraction. Choledocho-duodenostomy offers the only hope of recovery in such cases.

DR. HENRY O. MARCY, Boston, said that 18 years ago he operated on a woman for the removal of a gallstone in the common duct. A few weeks ago he operated on the same person for the purpose of releasing adhesions which had caused biliary obstruction. The woman has recovered from the operation.

DR. J. M. BALDY, Philadelphia, said that in many cases a diagnosis of gallstones or gall bladder disease is made; yet at the operation nothing is found, yet the patient may have undoubted symptoms of long standing gallstone trouble. On the other hand, in other cases operations have disclosed gross disease of the gall bladder; the patient has been relieved apparently, but after leaving the hospital there has been a return of the symptoms, even after a secondary operation, or cholecystectomy.

DR. JOSEPH PRICE, Philadelphia, reported 4 recent cases, and said that in two, when he opened the abdomen, he had to sidestep to get out of the way of the filth of gallstones. These patients were dying, and he was called to operate on them because they were dying. They were not suitable cases for the removal of the gall bladder. He believes he would have lost them on the table had he attempted to remove their gall bladders. He drained, put in cofferdams and the patients are now well.

DR. FRANK MARTIN, Baltimore, resorted to cholecystectomy in 14 cases out of 60. In most of the 14 cases there was a chronic cholecystitis, with disorganized gall bladder and acute gangrenous infection. In two or three of them there was an acute gangrenous inflammation of the gall bladder. In these cholecystectomy was followed by excellent results. He has had no deaths or serious shock following the operation.

DR. HOWARD A. KELLY, Baltimore, said that when he operates for any intra-abdominal pathologic condition, it is his practice to examine the gall bladder, among other organs, to determine whether it is diseased or whether gallstones are present or not. He believes in cholecystectomy where the gall bladder is grossly diseased, although one can not always do an ideal operation. He recalled 2 cases in which an ideal operation could not be done on account of the great density of the adhesions.

DR. CHARLES H. MAYO, Rochester, Minn., has operated occasionally after having made a thorough examination and thinking he had a case of gallstones, but found no stones. It is rare, however, for them to diagnose gallstones or disease of the bile ducts, even though no gallstones are found, without finding some abdominal condition which would have made it necessary to operate. He does not think a patient cares whether he has gallstones, duodenal ulcer or ulcer of the pylorus, if he can be relieved. Some years ago he operated and found a blue gall bladder, which is ordinarily considered a healthy gall bladder, but covered with adhesions. He drains such gall bladders and tries to relieve the adhesions. Two of these cases were reoperated, one a year afterward, the other two years thereafter, for the same condition, and at that time they found that a duodenal ulcer was the cause, which was overlooked at the first operation.

Hodgkin's Disease—A Type of Sarcoma.

DR. WILLIAM B. COLEY, New York, said that the theory which at the present time receives the greatest support is that Hodgkin's disease is a separate entity, in the nature of an infective process.

The only other theory that has received much consideration is that Hodgkin's disease is of the nature of a malignant tumor or a variety of sarcoma. Coley believes in the malignant nature of Hodgkin's disease. His observation has been that fever is not an infrequent occurrence in malignant disease, especially in sarcoma, if generalization has taken place.

As to the neck being the frequent starting point of Hodgkin's disease, suggesting the possibility of infection, he states that he has observed 70 cases of sarcoma of the neck in a total of 615 cases. As another reason for regarding the process of the nature of a sarcoma, Coley cites several cases in which the clinical diagnosis was sarcoma, while the pathologic report read Hodgkin's disease. Cases of Hodgkin's disease pursue a clinical course identical with that of sarcoma, infiltrating the surrounding tissue and causing death in precisely the same way.

Coley's conclusions, based on a study of upward of 600 cases of sarcoma, of which 70 originated in the lymph glands of the neck, are that Hodgkin's disease is merely a special variety of sarcoma, representing a fairly definite clinical pathologic type, but in many cases shading off into other types that correspond most closely with that of an ordinary round-celled sarcoma.

Management of Laparotomy Patients and Their Modified After-Treatment.

DR. HERMAN J. BOLDT, New York, said that no particular preparatory treatment is necessary for patients on whom it is intended to do an abdominal operation, unless the operation involves the opening of the stomach or the bowels. Stomach lavage is of benefit at the conclusion of the operation. Patients should not be kept unnecessarily under an anesthetic. The application of a tight bandage around the upper part of the thighs, to keep a blood reservoir in the lower extremities, in exsanguinated and very weak patients, is excellent. The same may in exceptional cases be done with one of the upper extremities. These bandages are taken off as soon as the operation has been completed, and thus more blood is thrown into the trunk. Strychnin during and after an operation should be used with more care than is usually done. The intravenous infusion of a 0.9 per cent. saline solution should not be too long delayed when the condition of the patient makes it evident that its employment may be of benefit. In instances of large myomata, where the patient has been much exsanguinated by hemorrhage, it is desirable that the infusion be begun as soon as the patient is fully under an anesthetic, so that by the time the operation has been completed about 1,000 to 1,500 c.c. may have been infused.

The application of a very simple dressing over the wound, and the adjustment of a snugly fitting Scultetus bandage of oxid of zinc plaster, are made. The administration

of a dose of morphin is desirable if there is restlessness or pain, the medication acting clinically as a heart stimulant. The author allows regular diet and unrestricted mobility within 24 hours after the operation, unless specially contraindicated. The patients are allowed to get out of bed as soon as possible after an operation. He avoids forced catharsis before the first four or five days after an operation unless there is a special indication for it.

In cases where resort to vaginal drainage is had, or where it is evident that there will be some secretions intraperitoneally after an operation (as in purulent cases and oozing from torn adhesions), trunk elevation is employed as soon as the patient is put into bed. For this the employment of a bed lifter, or the placing of high blocks or chairs under the head of the bed, is preferable to back rests.

Treatment of Senile Gangrene.

DR. EDWARD H. OCHSNER, Chicago, called attention to the fact that there are two distinct types of senile gangrene, the first occurring in cases with only moderately generalized arteriosclerosis, but in which there is a distinct mural thrombus. In this class of cases there is an early formation of a distinct line of demarcation, and it is best to delay operation until this line of demarcation has become well established, and then to amputate directly through the line. In the second class of cases there is a marked generalized arteriosclerosis, the whole affected extremity is markedly involved, there is no tendency to the formation of a line of demarcation, and an early high amputation is indicated.

(To be continued.)

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Oct. 4, 1906.

The President, DR. WILMER KRUSEN, in the Chair.

The Non-Absorbable Ligature in Pelvic Surgery.

DR. FRANK C. HAMMOND thought it should not be considered sound surgical practice to tie masses of tissue with heavy non-absorbable silk if catgut can be obtained. The ideal ligature should consist of material capable of keeping the tissues in contact, sufficiently strong to enable the tissues to proliferate and effect a living union of the parts, and that after the accomplishment of this the material ought to become eliminated without disturbance of the parts.

DISCUSSION.

DR. E. E. MONTGOMERY has been using both animal ligatures and sutures for a number of years, all buried sutures being of chromic catgut. So long as three years subsequent to an apparently aseptic operation he has seen abscess develop. In some suppurative conditions the removal of all pyogenic material is impossible and, no matter how aseptic the operation might be, infection of the silk ligature is probable.

DR. F. H. MAIER compared the present work with that of some years ago when in the dispensaries it was not unusual to have apparently entirely successful cases return months or years afterward with abscesses, inflammatory masses of the broad ligament or sinuses, for secondary operation.

DR. L. J. HAMMOND thought the ideal ligature has not yet been found. Catgut in the abdominal cavity might form one of the most fruitful culture mediums, and he hesitates to use it when all pyogenic conditions have not been removed. In the presence of pyogenic conditions, should further suppurative processes develop, an insoluble substance like fine silk furnishes a sort of drain; and its presence as a foreign body might produce sufficient irritation to be quickly walled off. Another advantage is its greater security against slipping.

DR. A. B. BAIRD has used both silk and catgut, with probably better results in the use of the animal tissue. He thinks, however, that there are well founded objections against the catgut which have not yet been overcome.

DR. BARTON COOKE HIRST has twice changed his practice in regard to suture material; at first using nothing but silk; then nothing but catgut. Except in suspension of the uterus and in intestinal work, for which Pagenstecher's thread is employed, he uses catgut exclusively, since it is now possible to make it absolutely sterile and also to preserve its tensile strength. It does not break nor does he have abdominal sinuses from its use.

DR. H. D. BEYEA agreed in part in the advantages claimed for catgut, but believes it had the disadvantage, as compared with silk, in greatly increasing the danger of hemorrhage. He pointed out that the ties can never be as sure as silk, and the necessity of making two ties or more on important blood vessels constricts a large area of tissue. Silk, No. 4 Tait, has given him practically no trouble. He does, however, see cases of persistent fistulæ caused by silk ligatures. He attributes much of his success with silk to the method of preparation. This is by sterilization by the fractional method, and at the time of operation it is allowed to soak for several minutes in a 1 to 500 mercuric chlorid solution. In puerperal or acute infection he uses catgut.

DR. CHARLES P. NOBLE abandoned silk in abdominal surgery 10 years ago, but he still uses silk in intestinal surgery and in hysterorrhaphy, although he believes that catgut could well be substituted in most of these operations. In sinuses resulting from the use of silk he does not operate, but uses a hook of his own device, similar to a crochet hook with a long handle, with which he fishes for the ligature and withdraws it. He has had no trouble with the catgut, which is sterilized by the cumol method. To prevent too ready absorption of the catgut it is first chromicized and then sterilized by the cumol method. He has not had secondary hemorrhage from the use of catgut, and has had no reason to believe that it has ever caused infection.

DR. BROOKE M. ANSPACH stated that at the University Hospital formaldehyd-cumol catgut is used, the gut being soaked in 10 per cent. formaldehyd solution for 24 hours, washed and dried, and then cumolized in the usual way. The plan has been adopted of storing the rings of catgut in a double envelope. The catgut is placed in the envelope before being cumolized and the entire package is subjected to the cumol process. At the time of operation the nurse tears off the outer envelope and the inner one is removed by an assistant. This provides an easy method of transportation and protection against contamination.

Relaxation and Atony of the Non-Puerperal Uterus Incident to Dilatation and Curettement.

DR. F. H. MAIER cited a number of cases of complete loss of tone in non-puerperal uteri during the performance of this operation and pointed out the increased danger of perforation at this time. Mention was also made of the injustice that may be done to the patient when atony is mistaken for perforation, if an operation commenced for the relief of a definite train of symptoms were left unfinished. The author is in accord with Kossman, Schaeffer and Van Tussenbroek as to the possibility of the occurrence of atony in a non-puerperal uterus, and is inclined to think that it only takes place in the presence of some pathologic condition of the walls.

DISCUSSION.

DR. CHARLES P. NOBLE thought that if the non-puerperal uterus can relax, knowledge of the fact is important. It has happened in his practice a number of times that the curette passed through the external os to the length of some inches, which led to the belief that the uterus had been perforated, and he thought it possible that such an explanation is not always correct. A case was mentioned in which this happened and in which at a subsequent hysterorrhaphy no evidence of perforation could be found. It was suggested that the relaxation of the uterus is responsible for the incident.

DR. JOHN M. FISHER recalled a case in which he had dilated the uterus with bougies and subsequently curetted, when he felt that the curette entered the uterus at a greater depth than he thought it should. Abdominal section did not reveal perforation of the uterus and he concluded that the case was one of relaxed uterus incident to the curettement.

DR. E. E. MONTGOMERY said that this explained several cases in which he had dilated the uterus and in which, although the curette had passed to a greater depth than apparently was justifiable, no perforation was found.

Book Notices

SURGERY, Its Principles and Practice. By Various Authors. Edited by W. W. Keen, M.D., LL.D., Professor of Principles of Surgery and of Chemical Surgery, Jefferson Medical College, Philadelphia. Vol. I. With 261 Illustrations and 117 Colored Plates. Cloth. Pp. 983. Price, $7.00 net. Philadelphia: W. B. Saunders Company, 1906.

The opening chapter of this great system of surgery is entitled, "A Narrative of Surgery." Herein is found a brief sketch of the lives of the great builders of surgery from Hippocrates to Lister, together, with their deeds recorded in a most entertaining and instructive manner, by James G. Mumford.

Chapter 2 is by George W. Crile, on "Surgical Physiology." This title includes "such laws and factors as are used in surgical practice, which rest largely on altered physiologic actions," and is a direct outgrowth of the immense amount of experimental work which has been done by surgeons on living animals as well as of observations during operations on man. The great amount of experimental work done by Crile has particularly suited him to write this somewhat novel though instructive chapter.

Chapter 3 by John C. DaCosta, Jr., is on the "Examination of the Blood." Technical methods of blood examination are not considered but the clinical significance of the blood findings are carefully discussed. The writer is justly conservative regarding the value to be placed on many of the blood findings, both positive and negative, in the light of our present knowledge and states it as a maxim that if the surgeon "would derive from this method of research, reliable information of diagnostic and prognostic application," he must "correlate the blood report with the other clinical symptoms."

Chapter 4 is on "Infection and Immunity" by Ludvig Hektoen. The nature of the infecting agents, the manner in which they produce disease, and the means by which the living body is able to resist or overcome infection, are all clearly set forth. No more convincing argument could possibly be presented of the utter futility of the promiscuous "drugging" which is constantly going on, than a careful perusal of this chapter on the natural means of defense of the body against infections.

Chapter 5 is on "Inflammation," by John George Adami. There is perhaps no subject so difficult to write on satisfactorily as is inflammation. It constitutes the very essence of pathology, yet is but a modified expression of the normal or physiologic activities of living cells. A correct understanding of its nature is essential to a clear comprehension of what constitutes disease. The subject has been well handled and by one whose extensive studies along that line have enabled him to write with authority.

Chapter 6 on "Process of Repair" by Francis Carter Wood, is the logical sequel to the chapters immediately preceding. In attempting to define "repair" there is considerable encroachment on the subject of inflammation, which, perhaps, is not altogether unavoidable, yet leads to a repetition of much that is found elaborated under the proper head. The repair of the various tissues is taken up and finally that of the different organs separately.

Chapter 10 on "Thrombosis and Embolism," 11 on "Erysipelas," 12 on "Tetanus," 13 on "Diseases Caused by Special Infections," 14 on "Diseases Directly Derived from Animals, Insects and Reptiles," and 16 on "Scurvy," are by Charles Hanson Frazier. Under the treatment of tetanus the subdural injection of a solution of magnesium sulphate is mentioned, but the dangers of repeating the injections are not sufficiently emphasized, nor is the strength of the solution mentioned. The great value of the propnylactic injections of tetanus antitoxin is well shown and its use in every suspected case strongly recommended.

Chapter 15 on "The Traumatic Fevers" is by Eugene Alfred Smith. It deals in a general way with the various surgical infections, septicemia, pyemia, etc. Great stress is laid on the needs of a more concise nomenclature. Many of the older terms are discarded entirely, while those which are retained are used with more precision to define clinical entities.

Chapter 17 on "Rickets" by Edward Hall Nichols, is rather short, and details, particularly in regard to treatment, are wanting.

Chapter 18 on "Surgical Tuberculosis" is by John Chalmers DaCosta. The general subject of tuberculosis in regard to its etiology, modes of infection, histology, progress, etc., is well handled. Tuberculosis of special organs and tissues is but briefly touched on, as it more properly belong to the "Special Part" rather than the "General Part." However, the statements that "primary tuberculosis of the kidney is rare," and "the disease is far more common as a process secondary to tuberculosis of the prostate, bladder, or epididymis," is directly contrary to the experience of most modern operators, who find the disease primary in one kidney in at least 90 per cent. of the cases in the early stages.

Chapters 19 on "Chancroid" and 20 on "Syphilis" are by Edward Martin. Both of these are modern and up-to-date, but the author is conservative and does not commit himself as to specificity of the *Treponema pallidum*, although the organism has now been uniformly found in practically all syphilitic lesions, except late ones, and also in congenital syphilis.

Chapter 21 on "Tumors" is by John Bland-Sutton. The classification adopted is certainly commendable for its simplicity and until more is known concerning the true nature and cause of tumors it is very satisfactory. In regard to the origin of cancer, the author says: "The embryonic theory is now discarded as an explanation of the origin of cancer." The parasitic theory is clearly presented and while, in a manner, a parallelism is drawn between the method of development and extension of certain infections and cancer, the author frankly admits that "up to the present no micro-organism has been found which will satisfy even one of Koch's postulates." A very interesting part of the chapter is that on "Teratomata and Dermoids," concerning which we have gained so much knowledge during the past few years.

Chapter 22, the last, on "Wounds and Contusions," including "Shock and Collapse," is by George W. Crile. As is well-known, the author has done a large amount of experimental work on shock, which has been of great value in leading to a clearer understanding of this condition. The results of his work are epitomized in this chapter. On account of the arterial changes which have been produced by the experimental use of adrenalin chlorid even in single doses is shown by recent studies, a word of caution is necessary on the indiscriminate use of this agent in shock.

The volume contains 983 pages, with 261 text illustrations and 17 colored plates, and is well gotten up. After each chapter is a bibliography, which, while not pretending in any sense to be complete, contains a list of the chief articles. Should the succeeding volumes maintain the high character of the first one, the work is certain to be a most valuable one and a standard on surgery for some time to come.

HEART DISEASE AND ANEURISM OF THE AORTA, with Special Reference to Prognosis and Treatment. By Sir William H. Broadbent, Bart, K.C.V.O., Physician in Ordinary to H. M. the King, and to H. R. H. the Prince of Wales, etc., and J. F. H. Broadbent, M.A., M.D., F.R.C.P., Physician to Out-Patients, St. Mary's Hospital; Assistant Physician to the London Fever Hospital. Fourth Edition. Cloth. Pp. 479. Price, $4.00. New York; William Wood & Company.

This book is made up largely of the rewritten lectures delivered by Sir William Broadbent before the Harveian Society in 1884 and also the Lumleian Lectures in 1891. These lectures dealt with "Prognosis in Diseases of the Heart." With the subject of prognosis as a nucleus, he has grouped enough pertaining to etiology, pathology, diagnosis and treatment to make a fairly complete manual of diseases of the heart. The subject of treatment in particular has been especially elaborated and is one of the strongest features of the book. The volume has grown materially since its first edition in 1897, by many additions, some of the new matter being added by the younger Broadbent so that one feels that it might have been better for the authors to have written a more nearly complete treatise and not one that is so much stronger in some parts than in others.

In a book, then, confessedly treating of pathology, diagnosis and symptomatology in a rather scanty manner, it is easy to find sins of omission, some of which even in a sketchy outline

seem serious. Thus in speaking of the diagnosis of pericarditis with effusion there is no mention made of the occurrence of bronchial breathing in the back (Ewart's sign), of the so-called Rotch's sign, of the importance of locating the apex impulse inside the outer left border of dulness, and of the occasional close resemblance between massive pericardial effusions and those in the pleura. Also under adhesive pericarditis the paradoxical pulse is not mentioned, nor the occasional recurrent paralysis, nor the pericarditic pseudocirrhosis of the liver (Pick). Under aortic regurgitation the auscultatory phenomena in the peripheral vessels are omitted. The discussion of right heart lesions is incomplete. *X*-ray as a diagnostic aid is, perhaps, not given enough importance.

Other chapters, e. g., the one on Dilatation, are far more complete. Sins of commission are comparatively rare.

It is, as has been said, in the chapters on prognosis and treatment, that the real strength of the book lies. Here the broad, common-sense views are admirable and show the result of years of experience and of close observation. We might cite the discussion of the study of the heart tones in mitral stenosis as illustrating this point. Emphasis is rightly laid on the importance of individualization in the matter of treatment and doing away with ironclad rules that must be put into operation the moment a diagnosis of disease of the heart is made. The proper value and the dangers of exercise are clearly brought out; the same is true of the use and abuse of digitalis. We are pleased to see one courageous enough to speak plainly about some of the extravagant claims made for the Schott plan of treatment. We quote (page 238): "It is difficult, therefore, to attach any real value to the remarkable diagrams of the cardiac dulness 'before and after' the bath, published in quantity by the enthusiastic advocates of this treatment, and one is compelled to question their accuracy if not their honesty." He does not entirely condemn this plan of treatment, but does condemn some of the methods of proclaiming the treatment as well as some of the conclusions reached by the Schott enthusiasts.

The make-up of the book is good; it is written in a clear, fluent style and is worthy of taking its place in the numerous company—not in the front rank, perhaps—of the English writers on the heart: Stokes, Walshe, Hope, Sibson, Latham, Gibson, Balfour, Ewart and others.

TREATMENT OF SYPHILIS. By A. Fournier, Professor at the Faculty of Medicine, Member of the Academy of Medicine, Physician to the St. Louis Hospital, Paris. English Translation, second edition revised and enlarged by C. F. Marshall, M.D. Cloth. Pp. 528. Price, $5.00. New York: Rebman Company, 1906.

This is a translation of the second and revised edition of his well-known treatise on the Treatment of Syphilis. The book is an excellent epitome of the best methods of managing the disease, as well as the patients suffering from the disease, a distinction well emphasized in these pages.

Between the same covers is a translation of the work by the same author on the prophylaxis of syphilis, treating very fully of the sociologic questions concerned largely with the victim of syphilis, the progenitor, the wet-nurse, the vaccinator, the women who too often distribute the scourge by their immoral practice; as also of the societies for moral and sanitary prophylaxis, the regulation of prostitution by the state, the instruction of young men who are exposed to the common temptations of their age, and kindred topics. Each subject is discussed clearly and with a view chiefly to the instruction of the reader. Few if any works published in the English language cover more completely and satisfactorily the difficult themes here presented.

The faults of the book, if such they may be called, are of two orders. The first is the failure to reflect fully the great work done by Neisser and others in connection with the organisms supposed to be factors in syphilis, and their transmission to the anthropoid apes. The second is inevitable in a book written by a French author. The concise and incisive sentences of Allbutt, or Wood, or other English authors could scarcely be expected in a writer of Gallican instincts.

Here and there doctrines are enunciated which, in the scrutiny of the experts, would scarcely pass unchallenged. For example, in the chapter devoted to treatment of the initial sclerosis by excision, after a just and comprehensive exposition of the arguments for and against the practice, the author (page 39) distinctly favors it, notwithstanding the frequent demonstrations of the futility of this method. Patients have been photographed with the scars of excision in evidence who were plentifully covered with a brilliant and in no way modified exanthem of systemic disease. As a matter of fact, the practice of excision should now be condemned as both futile and barbarous. In justice to the author, however, it is to be explained that in the note appended to his chapter on this subject (page 40) he explains that the method appears to have "spontaneously died out," though "nevertheless it should not be consigned to oblivion." Such is the longevity of a faulty method when stamped with the seal of a great name!

The book, as a whole, will find its most appreciative reader in the general practitioner. It is a safe and a useful guide, and while in value as a storehouse of fact it does not compare with the labors of the distinguished author in the field of the ravages of "late" syphilis in the second generation, and in the stress of its attacks on the nervous system, it is to be said in extenuation that the field here covered offers far less facilities for the play of the author's original observation and keen analysis.

The translation has been well done.

OUTLINES OF HUMAN EMBRYOLOGY. A Medical Student's Handbook of Embryology. By G. R. Satterlee, M.A., M.D. First Edition. Cloth. Pp. 173. Price, $1.25 net. New York: John Wiley & Sons, 1906.

This work is intended for medical students and comprises an outline of the principal facts in human embryology with the omission of details and theories which would be likely to confuse the beginner without assisting him to a general understanding of the subject. An understanding of normal histology is taken for granted. The first three chapters treat of the genital glands, the fertilization of the ovum and the formation of the body from the primary germ layers. The remaining chapters give the details of the development of each organ separately. Special attention is given to the common congenital malformations and their causes. The illustrations, which are purposely made diagrammatic, are clear, and opposite each plate is inserted a blank page on which it is hoped the student will make his own drawings. The work ought to make an excellent text-book and is sufficient as a book of reference for the ordinary needs of the practitioner.

EATING TO LIVE, with Some Advice to the Gouty, the Rheumatic, and the Diabetic; a Book for Everybody. By J. J. Black, M.D., Member of the College of Physicians of Philadelphia; Member of the Delaware State Medical Society, etc., Cloth. Pp. 412. Price, $1.50. Philadelphia: J. B. Lippincott Company, 1906.

It is difficult to say whether this work is intended for the physician or for the layman; it lacks the scientific accuracy and systematic presentation which would be demanded by the physician and it is too technical for the layman. The lesson which it teaches, however, is important for both, namely, moderation in the amount of food as the first principle of diet. The ordinary facts regarding the composition and office of foods are plainly set forth and a very good account of Professor Chittenden's experiments is given. Mixed with the strictly scientific we have much Epicurean gossip as to the varieties of wine and the customs of society. Such interpolations doubtless serve to relieve the tedium of a scientific discourse and indicate that the book must not be judged according to strict professional standards.

A MANUAL OF PATHOLOGY. By G. McConnell, M.D., Pathologist to St. Louis Skin and Cancer Hospital, etc. Flexible Leather. Pp. 523. Price, $2.50. Philadelphia: W. B. Saunders Company, 1906.

Dr. McConnell's manual is a creditable work of its kind. So long as there is demand for books that present the knowledge of a subject in the form, more or less, of a catalogue of facts. Then we must be thankful when the material is clearly and orderly arranged and the facts correctly stated, which is the case in this instance.

Miscellany

Phthisis and Superstition Among the Maoris.

Dr. Edwin Chill, Ealing, England, in the *British Medical Journal* for August 18, relates some interesting observations made on a visit to New Zealand. Though physically a powerful race, the Maoris are slowly dying out, like many other native populations when brought in contact with European civilization.

Of old they were divided into a number of tribes perpetually at war with one another. Their villages were built and stockaded on hills as a protection against sudden raids and they only descended to the plains to cultivate the land during times of temporary peace. Their clothing, which consisted of woolen matting, was well suited to protect their bodies from cold and damp. Since the establishment of a settled government, the Maoris have abandoned the more salubrious hills and have built their stockades on low-lying damp land. They have partially adopted European clothing, and men and women may be seen lazily standing outside their poorly-constructed huts or roaming about the streets clad in insufficient garments. This altered condition of habitation and dress, no doubt, produces in them the soil necessary for the growth and multiplication of the tubercle bacilli.

Dr. Chill states that they have also adopted European education and religion, for in every Maori village is the schoolmaster, who combines in his person the duties of lawyer, doctor, pastor, schoolmaster and friend. There is always the church, for the Maoris are all Christians now, but close by is the native meeting house with its grotesque carvings and symbols of old cannibalistic days. After a visit to the wonders of Geyserland, Dr. Chill's party arrived at a village beautifully situated on the shores of Lake Taupo. There had been nine deaths the previous week among the small community of natives, and three others were then lying seriously ill. Dr. Chill was asked to see them as the nearest medical man lived some sixty miles away. Accordingly, he was conducted to the first case, an emaciated young woman of 25, with all the symptoms of acute phthisis. There was a large cavity in the left lung, and a patch of consolidation at the apex of the right. She was lying on a mat stretched on the ground in a tent some 8 by 6 feet.

The next case was that of a child who had had three attacks of hemoptysis, and, fearing a fatal termination, the parents had called in a native medicine man, who had employed charms and incantations, and then prophesied the recovery of the patient. Hearing voices as Dr. Chill and a friend approached, the mother inside the sick tent promptly extinguished the candle; however, with a little persuasion, she came out and explained that she was afraid of the presence of an English medical men, as it might break the spells of the native doctor, and her child might die. They left, but not before Dr. Chill heard the patient give the characteristic cough associated with the last stage of phthisis. He was curious to know what excuse the medicine man would make for the failure of his prophecy. The reply usually made is simple enough: "If it had been a Maori complaint, recovery would have been certain; but what could he do against a pakeha (European) disease?"

The third patient lived in an outlying settlement, to which there was no road. The schoolmaster acted as guide, and conducted Dr. Chill through bush and swamp till they reached the place, about a mile and a half away. On the way the schoolmaster gave an account of his work and of his difficulties in treating patients with the aid of an elementary medical book and a case of drugs supplied by the government, as well as an account of the Maori character in health and disease.

It is well known, Dr. Chill states, that when a Maori is taken ill, as observed in some other primitive races, he will make up his mind that he is going to die and dies. Accordingly, on the first symptoms of illness, the tent is quickly fitted up in the garden adjoining, and the patient hurried into it, for should he expire in the house that house would be "tabu," after which no native would live in it. Thus it is that in various parts of the country deserted houses are seen. Superstition dies hard among primitive peoples.

This Maori settlement is situated among a number of hot springs strongly impregnated with sulphur. The whole village is enveloped in the rising steam. Some of the pools, formed by the springs, are used for bathing, some for washing clothes, and those of intense heat for boiling water in kettles and cooking food. The question arises whether the constant inhalation of this steam, both here and in other parts of Geyserland, acts injuriously on the pulmonary tissues and is the exciting cause of tuberculosis.

The Maoris now number about 40,000, compared with a population of nearly 900,000 colonists. In the South Island they are practically extinct. They are mentally and physically superior to all the other native inhabitants of Oceania and add considerably to the charm and interest of New Zealand as a tourist center. Surely they are a race worth preserving. A little outlay should procure them qualified and more accessible medical advice and a sanatorium for the treatment of tuberculosis in place of their miserable tents. The great stumbling block, one can conceive, is the inborn native superstition, but even this is not an insuperable difficulty.

Recognition for Labors of the Yellow Fever Commission.—H. H. Donnally (*George Washington University Bulletin*, v, 3) gives a historical summary of the steps in the discovery of the mode of transmission of yellow fever, especially with reference to the work of Dr. James Carroll. The work of Sternberg, although inconclusive, is recognized as necessary in clearing the ground for subsequent investigations, although both his *Bacillus X* and Sanarelli's *Bacillus icteroides* have been proved to have nothing to do with the etiology of yellow fever. Dr. C. Finlay received recognition at the Pan-American Medical Congress in 1901 as the discoverer of the part played by the mosquito in the transmission of the disease. The practical demonstration of the truth of the theory, and its culmination in the control of the disease, are due to the four men constituting the yellow fever commission, Reed, Lazear, Carroll and Agramonte. Of these two are dead. Reed and Lazear, the last having perished as a martyr to the cause of science, in demonstrating on himself that yellow fever is transmissible by the mosquito. Carroll and Agramonte remain. Carroll has been advanced to the position of professor of bacteriology and pathology in the Columbian (now George Washington) University, a place left vacant by the death of Reed; he also succeeded to Reed's position in the Army Medical School and was made curator of the Medical Museum; and in 1902 he was commissioned first lieutenant. He has been commended to the government for special honors by the legislative council of the American Medical Association in resolutions published in THE JOURNAL, Jan. 20, 1906. The highest honor, however, is proposed by the *British Medical Journal*, which proposes editorially, in its issue of Sept. 6, 1906, that the Nobel prize be divided among the four members of the yellow fever commission. When it is remembered that to his scientific abilities shown in the research, is added the courage which made him the first to undertake to produce experimental yellow fever in his own person, it must be admitted that Dr. Carroll is well worthy of the honor proposed.

Influence of District Medical Societies on Intellectual, Moral and Scientific Progress.—Dr. G. Paquin delivered an address with this title at a meeting of the Portneuf Medical Society, September 13, summarized in the *Bulletin Méd. de Québec* for September. He cited evidence to prove that the district medical societies are raising the level of the profession mentally, morally and scientifically, and are conferring on the physician the social influence to which he is entitled. "The physician to-day," he said, "is regarded as the depository of the knowledges of the day, the adviser of the authorities, and the counselor of the public in the safeguard of its most precious capital—health. If the district medical societies will coördinate their efforts—and this can be done only by grouping themselves around the general medical association and working in concert with that association—they can accomplish six great

works: 1, They can diminish, if not entirely suppress alcoholism, that social gangrene; 2, diminish the ravages of tuberculosis, which carries off annually 3,000 victims in the province of Quebec; 3, force every municipality to have a board of public health composed of men devoted to progress; 4, dictate to life insurance companies and to lodges, etc., a reasonable tariff which they will be compelled to accept; 5, insist on the adoption of a law tending to a satisfactory regulation of the manufacture and sale of 'patent medicines,' and, 6, protect the medical profession against so-called irregulars who each year impose on the legislature and pound on the doors of the licensing boards until they manage to obtain licenses which, once obtained, enable them to give free course to their shameless quackery and to exploit the credulity of our rural population and to discredit our profession. Organization will thus enable us to comfort our families, to fortify the vitality of our race, to protect religion, and to contribute to raise the moral and mental level of the country at large."

Importance of Early Diagnosis.—Professor Monprofit of Angers, presiding at the Nineteenth French Congress of Surgery, held at Paris, October 1 to 6, devoted most of his presidential address to the question of how to diagnose morbid conditions earlier. He stated that at present surgeons might relax their efforts for perfecting of their technic, and should turn their attention more to the perfecting of the diagnosis. Early operations are almost invariably easy, harmless and effectual, while tardy operations are difficult, tedious, dangerous and frequently ineffectual. The best way to perfect the diagnosis is to train the young medical student from the start at the bedside, to initiate him thoroughly in the art of diagnosing on which depends the art of curing. From the very beginning the medical student should examine patients and learn how to treat them, for all his life is to be spent with "la clinique et la thérapeutique." "From the day that the young man decides to study medicine he should haunt the hospitals," Trousseau used to say, and Monprofit adds, "and also the dissecting room." The hospital is not only a school for diagnosis and treatment; it is there alone that the questions of pure science can be presented in a manner to impress the student's mind and fix them in his memory. Then the laboratory should intervene to throw light on the diagnosis, elucidate the pathogenesis and guide treatment. Surgeons can not hope to make any serious progress in the surgical treatment of internal affections, he continued, unless in cooperation with physicians trained to make the diagnosis in the early stages, from the functional disturbances, not waiting for self-evident signs to appear, showing that the affection has run its entire course.

Glycosuria from Refrigeration.—K. Glaeser, in the *Wien. Klin. Wochschr.*, July 26, 1906, reports some very interesting observations on the effect of cold in producing glycosuria. Such observations were made some years ago by Bamberger on persons who had attempted suicide by drowning, and Glaeser's investigations confirm these results. The glycosuria does not follow exposure to cold water in all cases, but he found it in four out of nine. Experiments on animals by Araki have shown that in these cases the glycosuria is accompanied by the excretion of lactic acid in the urine. Glaeser found the same to be true of man. The origin of the lactic acid is somewhat certain, but appears to be due to a splitting of the sugar molecule into two molecules of lactic acid in consequence of the lack of oxygen. The glycogen disappears from the liver, which is to be attributed to muscular exertion as animals exposed to cold pass into a state of tetanus before death. The author suggests that as lactic acid is not found in diabetes nor in alimentary glycosuria, it is probably characteristic for those conditions in which a temporary glycosuria is produced by a sudden diminution of oxidation in the system. Such conditions would include a variety of forms of poisoning in addition to sudden cooling of the body. The demonstration of sugar and lactic acid in the urine may become an important sign in forensic medicine as a means of determining whether, in the case of a body found immersed in water, the individual had died by drowning or had been placed in water after death. Some conclusion as to the time of death might be drawn from the pathologic constituents of the urine.

Endemic Cancer.—At the recent international cancer conference at Heidelberg, Sticker of Berlin related that in a certain small town the vital statistics had been kept very carefully for 80 years. They show that out of the first 10 cases of cancer on record, 8 occurred in 6 houses on a certain street; in the next decade 7 out of the 10 cases were in this same street, and up to 1905, fully 25 of the total 41 had occurred in this street, and 23 of the cases in only 7 families. Prinzing exhibited maps showing the distribution of cancer through southern Germany and the adjoining districts in Austria and Switzerland. Cancer of the female genital organs is about evenly distributed, but cancer of the stomach and esophagus seems to occur in endemic foci. He suggests the possibility of different parasites for these two groups of cancers. Stralsund is said to be the most affected of all districts in Prussia, and Behla exhibited maps showing that the foci are to be found in low-lying, damp parts or in the vicinity of rivers and ponds, while cancer is comparatively rare on the dry, elevated plateaus. He called attention also to the frequency of cancer in the trout of certain ponds, while other ponds near by are entirely free from it. He thinks that the parasite of cancer should be sought in damp soil. Czerny is inclined to believe that there must be some intermediate host.

Goat's Milk for Infants.—Cahill, of London, in a letter to the *Lancet*, states that it is surprising that at this day and in spite of the work carried on for so many years by the British Goat Society and others, there should be any hesitancy in admitting the superiority over cow's milk for infant feeding. Goat's milk, he states, is primarily more digestible because its casein forms only a flocculent curd and the infant does not suffer from a tendency to accumulation of hard, cheesy masses, as with cow's milk. The goat, according to Cahill, is singularly resistant to tuberculosis, an important consideration in view of the wide dissemination of this disease among dairy cattle. The nourishing power of goat's milk is just as high as that of cow's milk, and the milk is very efficient as the sole food of an infant up to the age of six or eight months. The sole objection is the difficulty and expense usually entailed in obtaining goat's milk from a reliable source at the moment when it would be of value. Cahill declares that there is no unpleasant or peculiar smell or odor attached to the milk, provided that the goat be kept under cleanly conditions and apart from any association with the male of the species. He reports a case in which an infant was fed on goat's milk and remained entirely free from the digestive disturbances which generally fall to the lot of the bottle-fed baby.

Moslem Table Etiquette.—The *Lancet* gives the following rules as set down by old Moslem precept as to how to behave religiously and appropriately at meals:

Wash your hands and mouth before eating. When eating never put one leg on the other, nor put your elbows on the table as this hinders good digestion. Never be a slave of your repast and never touch any meal if you are not hungry. Be ever content with what you find before you and never give yourself great pains in preparing choice dishes. Be always, if possible, at the table in company with friends, as the Prophet never partook of his meals alone. Always begin and end your meal with thanksgiving to Allah. Always eat with your right hand and swallow, before and after food a little salt. It shows good upbringing and is pleasing to Allah ever to put into the mouth only small morsels and never to make any observations on the defective qualities of dishes. Never cut bread with a knife, but, as the Prophet did, break it. Never choose the fruit offered but take any *au hasard*. Never wipe your fingers with bread. Avoid blowing on a hot dish, but wait until it gets cool. Eat dates, apricots and other similar fruit one by one, remembering in eating them thus the unity of Allah. Avoid at the table drinking much water. Your meal finished, use attentively the toothpick, gather up the crumbs, and wash again your hands and mouth. Lastly, render thanks to Allah.

Damages for Sickness in a Boarding House.—A letter from Frankfurt in the *Med. Klinik* for October 21 states that the proprietor of a large boarding house recently sued for damages on account of injury sustained from the illness of one of the boarders, who had been taken with typhoid fever of such a severe type that the attending physician refused to consent to removal to a hospital. The courts decided against the plaintiff, saying that the boarder was liable for damages only in case she had entered the boarding house knowing that she had typhoid fever—which no one claimed.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEW YORK State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

NEVADA State Board of Medical Examiners, Carson City, February 4. Secretary, Dr. S. L. Lee, Carson City.

KANSAS State Board of Medical Registration and Examination, Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

NEBRASKA State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

Rules Governing Examinations in Louisiana.—Dr. F. A. Larue, secretary of the State Board of Medical Examiners of Louisiana, writes that the following rules are announced at the beginning of regular examinations:

1. All candidates are on their honor not to crib or to give any information. If so caught, forfeiture of the paper is the penalty.

2. No one can leave the room for more than 3 minutes.

3. No one can leave the room before handing in his paper, or after taking questions for the next subject.

4. Only one candidate is allowed out at a time.

5. Each paper must be folded in such manner as to permit ready perusal.

6. The name of the candidate and the subject must be written on the outer fold of each paper.

7. Any applicant has the right to ask the board explanations on apparently ambiguous questions.

He states that these rules cover all the points that the board considers practicable and just.

Rules Governing Examinations in South Carolina.—Dr. W. M. Lester, secretary of the South Carolina State Board of Medical Examiners sends us the following rules governing examinations for license to practice medicine in that state.

1. An examination is required before a license is granted to practice medicine in South Carolina. The law requiring such procedure went into effect Jan. 4, 1894, and has been enforced since that date.

2. Each applicant is required to make an affidavit setting forth his age, place of residence, time and place of each course of lectures, date of graduation. The affidavit must be corroborated by the exhibition of his diploma and must present a certificate of preliminary education.

3. A fee of $10.00 must accompany the application. Half of this fee is returned in case of failure.

4. Examinations are always in charge of some member of the Board of Examiners.

5. Each candidate is known by his number, which is arranged as follows: Envelopes are numbered and each contains a blank bearing the corresponding number, on which the applicant writes his name and address. This completed blank is returned by the applicant to the envelope and the envelope sealed by him.

6. Each candidate places on his answer papers the number given him and also the year of his graduation. No other marks of identification are allowed on the answer papers.

7. The answer papers are collected by the member of the board having charge of that subject. Such member examines the answer papers and marks each candidate by placing the marking opposite the candidate's number. These markings are sent to the secretary, who tabulates them. When the markings are completed the envelopes containing the names are opened and these names are placed opposite the corresponding numbers.

8. No dishonest methods are tolerated, and any candidate who disregards this rule is debarred from further examination. This rule includes the giving or obtaining aid.

9. Ten questions are given on each paper, and all subjects for examination are covered by the ten question papers given.

10. The time allowed for each examination paper shall not exceed three hours.

11. No candidate is allowed to leave the room after the question papers have been distributed, until he has completed his answers and delivered the same to the member in charge.

12. The examination is in writing and in the English language. If any candidate is unable to write in the English language, he will be allowed to write in his native language, provided he pays an extra fee of $15.00, to cover the cost of translation.

13. A general average of 75 per cent. must be attained, and not less than 60 per cent. on any one branch.

14. Candidates who fail to receive a license at any examination must be re-examined in all branches on which he made less than 80 per cent.

15. Handwriting of candidates must be legible and orthography must not be such as will disgrace the medical profession.

16. The examinations of the State Board are divided into two sections: The first covering the junior or primary branches of medical education, hereafter to be designated as the Junior Curriculum. The second, covering the senior and clinical portion of medical education, hereafter to be designated as Senior Curriculum.

The Junior Curriculum comprises the following branches: 1. General anatomy; 2, physiology and histology; 3, materia medica and medical botany; 4, chemistry, organic and inorganic, and medical physics; 5, bacteriology and pathology.

The Senior Curriculum comprises: 1. Anatomy, regional or surgical; 2, practical hygiene and sanitary science, state medicine; 3, practical urinalysis, urinary microscopy; 4, therapeutics; 5, surgery, general and special; surgical procedure; 6, practical medicine and diseases of children; 7, practical obstetrics and gynecology; 8, medical jurisprudence and toxicology.

All applicants before the board, holding a diploma from a four year graduated medical college of established reputation, who have pursued a study of four separate courses, and have attained a mark of not less than seventy-five per cent. on each individual branch of their curriculum, as evidenced by certificate from the dean of their college, are exempted from examination in the Junior Curriculum, and are examined only on those subjects contained in the Senior Curriculum, as above outlined. All others must take both the Junior and Senior Curriculums.

Rules for Examinations in Missouri.—Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, sends us the following statement of the method of examining applicants for license to practice medicine in that state:

There is nothing unique in the method of examining applicants for license to practice medicine in Missouri. An honest, square deal, that the board may determine the fitness of the applicant is all our law contemplates; but fitness as to character is taken into consideration as well as the requisite knowledge for answering a certain per cent. of the questions asked. The character of the applicant is ascertained in part by the same being vouched for by at least two reputable physicians in the application.

This admits the applicant to our examination rooms where general deportment completes the character records and this is watched closely. Cheating and grossness in the examination rooms make greatly against the applicant, for no one who is caught cheating is allowed a certificate; it matters not how his grades may run. Each applicant must rely wholly on his own knowledge of the questions asked. No one is permitted to help another in any way; applicants are arranged at tables with this in view, being separated so far that all temptation to communicate one with another is removed. No books or help of any kind are permitted in the examination room. After all are seated one set of questions is distributed to the applicants and no one is allowed to leave the room until the allotted time is up and the papers handed in.

Ten questions are selected from each of the twelve branches, anatomy, physiology, chemistry, bacteriology, surgery, practice of medicine, therapeutics, gynecology, obstetrics, pathology, hygiene and medical jurisprudence.

Our law permits under-graduates to take the examination; this is probably one reason that there is so large a per cent. of failures before the Missouri State Board of Health, yet as a whole those who take our examinations are honest, brainy, hard workers, worthy of any calling and this board is especially proud of its licentiates. It is always thought better to refuse a license to one who possesses sufficient knowledge to pass the examination if he is void of character than to grant a license on his technical knowledge and have to revoke the same for dishonorable and unprofessional conduct.

After the examination in the twelve branches has been completed, which requires three days, each member of the board (except the secretary), examines and grades his part of the papers; the time allowed for this is from two to six weeks, according to the number of applicants, after which the board meets at the appointed time and place to pass on these applicants seriatim. Those who make an average of 75 per cent. or above are granted a license to practice medicine in Missouri.

Old practitioners are given five points credit for five years' honorable practice since graduating from a reputable medical college and one point for each succeeding year thereafter. Of course it is expected of the old practitioner that he be well up in such branches as obstetrics, gynecology, therapeutics, surgery and practice of medicine.

Rules Governing Examination in Virginia.—Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, sends us the following rules governing examinations for license to practice medicine in that state:

1. So far as possible, but one applicant at a desk.
2. Applicants shall be seated by lot at each examination, signing their papers by the register number only.
3. No compend, notes, or text-books allowed in the examination room.
4. Conversation of any kind between the applicants will be considered as an attempt to either give or receive information, and the applicants so conversing will be thereby disqualified for that examination.
5. Applicants are not permitted to leave the room except when accompanied by an examiner, and then not within one hour from the time questions are announced.
6. No visitors allowed within examination hall during the progress of an examination.
7. For future examinations, plain paper must be used by applicants, and any reference by sign or expression which shall indicate the school of preparation or graduation, or any reference to a professor in same, shall disqualify the applicant making such reference or indications.
8. At the bottom of each examination paper, each applicant must write and sign, by his registered number only, the following pledge: I, No.————, hereby swear that I have neither given nor received any assistance during this examination so help me God. No.————
9. Questions will be given out, and answers collected, punctually at time specified for each section.

Rules Governing Examinations in New York.—Mr. Charles F. Wheelock, Chief Examinations Division, New York State Education Department, sends us the following rules and regulations governing the examinations for license to practice medicine in that state:

A candidate for license to practice medicine in New York State must furnish evidence that he

1. Is more than 21 years of age.

   The candidate's affidavit is accepted as sufficient for this purpose.

2. Is of good moral character.

   Evidence required under this head is the certificate of two physicians in good standing.

3. Has the general education required preliminary to receiving the degree of bachelor or doctor of medicine in this state.

   The evidence required for this preliminary education is a formal certificate from the principal of a registered secondary school, covering four years of high school work and showing in detail the subjects pursued, with the number of weeks and hours a week and standing attained in each. In case candidates have attended college, a corresponding certificate for college work or the presentation of the evidence of a college degree. Candidates unable to furnish acceptable certificates may take regents' examinations instead.

4. Has studied medicine not less than four full school years in a registered medical school.

   Evidence of this fact must be presented on a special blank to be signed by the proper authorities of the college, giving the years in which the work was done and the number of months in each year.

5. Has received either the degree of bachelor or doctor of medicine from a registered medical school, or a diploma or license conferring full right to practice medicine in some foreign country.

   Either the diploma or a properly executed certificate from the medical school is accepted as evidence under this head.

A candidate who presents satisfactory evidence under these five heads and who in addition pays the fee of $25 is admitted to the licensing examination. The question papers used at this licensing examination are prepared by the State Board of Medical Examiners, these examiners being appointed by the regents of the University from a list of nominees made by each of the three state medical societies.

Questions for the four examinations to be held each year are prepared and printed without date in advance of the examinations. Not even the members of the board who prepared the questions know what questions are to be used at any given examination.

The examinations are supervised by representatives of the department other than the State Board of Medical Examiners. In fact, the members of the State Board of Medical Examiners do not meet the candidates face to face at all and prefer not to meet them. Each candidate at the opening of the examination is assigned a number, by which number alone his papers are known to the examiners. The papers are first sent to the office, where a record of them is made; after which they are distributed to the various examiners for rating, and after a report of the rating has been received at the office the candidates are notified of the results and licenses are issued to those who are entitled to them. Seventy-five per cent. in each subject is the minimum passing mark.

Each candidate must present at the examination a recent photograph of himself, which he must endorse in the presence of the proctor in charge of the examination. This photograph becomes a part of the permanent record of his case and may be used as evidence in case of any suspicion of an examination having been taken by proxy.

Iowa Reciprocity Report.—Dr. J. F. Kennedy, secretary of the State Board of Medical Examiners, sends us a report of physicians licensed through reciprocity since the beginning of the year. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago,	(1900), (1901), (2, 1905) (2, 1906)	Illinois
College of P. and S., Chicago	(1905)	Wisconsin
Chicago Homeopathic Med. Coll.	(1879)	Nebraska
Northwestern University	(1903), (1904), (9, 1906)	Illinois
Hahnemann Med. Coll., Chicago	(1904) (4, 1906)	Illinois
Bennett Coll. of Eclectic Med. and Surg.,	(1903) (1904) (2, 1906)	Illinois
Rush Med. Coll.,	(1897), (3, 1900), (1902), (1904) (1905)	Illinois
College of P. and S., Keokuk	(1878)	Missouri
Baltimore Med. Coll.	(1905)	Delaware
University of Michigan	(1906)	Michigan
Michigan Coll. of Med. and Surg.	(1906)	Michigan
St. Louis Coll. of P. and S.	(2, 1906)	Illinois
Barnes Med. Coll., (1905) Illinois; (1905) Nebraska; 1898 North Carolina	(2, 1906)	Missouri
Ensworth Central Med. Coll.	(1906) Kansas; (1906)	Missouri
University of Missouri	(1906)	Missouri
Lincoln Med. Coll.	(1906)	Nebraska
Omaha Med. Coll.	(1894), (1901)	Nebraska
University of Nebraska	(1904), (1905)	Nebraska
Creighton Med. Coll.,	(1895) Kansas; (1904), (1905)	Nebraska
Pulte Med. Coll., Cincinnati	(1897)	Michigan
Eclectic Med. Inst., Cincinnati	(1903)	Illinois
Medical Coll. of Ohio	(1879), (1882)	Indiana
University of Vermont	(1899)	New Jersey
Wisconsin Coll. of P. and S.	(1898)	Wisconsin

District of Columbia October Report.—Dr. George C. Ober, secretary of the Board of Supervisors in Medicine, reports the written examination held at Washington, Oct. 11, 1906. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 27, of whom 14 passed and 13 failed. The following colleges were represented:

PASSED. College.	Number and year of grad.
George Washington University	(1, 1905) (6, 1906)
Georgetown University	(1, 1905) (3, 1906)
Hahnemann Med. Coll., Philadelphia	(2, 1906)
University of Virginia	(1, 1902)

FAILED.	
George Washington University	(1 1905) (5, 1906)
Howard University	(3, 1906)
Georgetown University	(1, 1903) (1, 1905)
Maryland Med. Coll.	(1, 1905)
Southern Homeo. Med. Coll.	(1, 1906)

Michigan October Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, Oct. 9-11, 1906. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 9, of whom 7 passed and 2 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Northwestern University	(1875)	75.4
Johns Hopkins University	(1906)	92.2
Harvard Med. School	(1905)	82.9
University of Michigan, Homeo. Dept.	(1906)	90.2
Hahnemann Med. Coll., Chicago	(1905)	91.5
Jefferson Med. Coll.	(1905)	83.8
Imperial Alexandria Univ., Helsingsfors, Finland	(1906)	80.5

FAILED.		
Detroit Homeo. Med. Coll.	(1876)	53
Meharry Med. Coll.	(1905)	69.7

Medical Organization

ORGANIZATION WORK IN ILLINOIS.

By J. N. McCormack, M.D.
Chairman of the Committee on Organization of the American Medical Association.
BOWLING GREEN, KY.

I have been delayed in making a report on conditions in Illinois, as they appeared during an extended itinerary there in the month of April last, partly because of absence from the country and the pressure of other duties, and still more on account of the complexity of these conditions, and the difficulty of suggesting such modifications in plans and methods as might lead to better results without injustice or offense to any interest or individual involved in the suggestions.

The plans for the itinerary were made with much care by the council and president of the Illinois State Medical Society. I spoke not less than twice a day—often three times, and once four times—during the entire month. Both the profession and public were advised as fully as was possible of the purposes of the meetings, and the attendance was fair at most and large at several places. A meeting for the profession in the afternoon and for the public in the evening was the usual order of procedure, and this arrangement was always attended by the best results. At several places the meeting for the profession was held in the hall after the one for the public, laymen being invited to remain always, and often the subjects for special inquiry and discussion were so numerous and intersting as to continue the meetings well into the middle of the night.

The councilor, or some one selected by him, went with me over each district, the county society officers were always on hand with conveyances to take us from and to the trains, and in every way my work was made as easy and pleasant as could be done by forethought and the utmost courtesy. As the meetings were so arranged as to make at least one of them accessible to the profession of every county, and, as full notice was given to the profession in advance, it was not the fault of the councilors if every physician in the state did not get to at least one meeting. We made a complete failure in the appointment at Rock Island. With about 250 physicians within a radius of a few miles, the councilor was unable to arouse any interest in the work and no meeting was held.

Naturally I came in contact with the best elements of the profession in Illinois, but as this is the case everywhere it could not be misleading. I got the impression constantly that its personnel would bear most favorable comparison with that of any other state I have visited. While the society meetings in most counties had been too infrequent for the best results, and while apathy, frictions and misunderstandings were still only too common, the uplift following the reorganization was very generally recognized and appreciated. While it can not yet be called an organized state in the modern sense, at least enough had been done in most counties to create a desire for better things, and my suggestion for weekly meetings, and systematic postgraduate instruction, as the fixed program for all county societies, was received with evident interest.

Although great inequality exists in different localities, and much remains to be done by the discussion and adoption of better business methods, the profession is better supported here than in most states, the average fees being about double what they are in Pennsylvania, for instance. The plan for joint meetings with the bar, teachers, ministerial, press and other lay associations, legislators, city and county officials and the public generally, in each county, for the discussion of public health problems, the suppression of quackery, the "patent-medicine" evil, and other matters of similar import, was new but met with almost universal favor. This was even more pronounced with the laity than the profession, as thoughtful members of the latter realized the labor and responsibility they would assume in leading such an important and far-reaching reform.

To an extent which I have not observed elsewhere a strong antagonism to the health and medical laws was found very general among lawyers. It developed in the discussions, as well as in private conversation, that these laws, especially the medical laws, and the ethics of our profession, probably not so rigid or so well enforced as theirs, but having the same common purposes in view, are often looked on as needless and as selfishly devised infringements on the rights of the citizen. In the frank discussions which followed my talks everywhere it was encouraging to find how anxious were the members of this great profession for practical information in regard to all these matters, and how readily misunderstandings were dispelled by candid face-to-face explanations. As this work goes on I am more and more convinced that in the past we have not been frank enough with the public about our affairs, and that the time has come for frequent, systematic, open meetings, in every county where the profession is capable of leading such a movement, for the discussion of all questions of common interest to the profession and the people.

As a part of my official duty I undertook a systematic inquiry to ascertain why the medical laws of Illinois are not so administered as to eradicate or at least greatly to minimize quackery. Under the leadership of Rauch, from whom I received my first lessons in this work, this was the pioneer state in this field, at once an example and an inspiration to all the others. It is the home of THE JOURNAL, and in a sense the headquarters of the profession. The laws are strong and need to be perfected only in detail, the officials charged with their administration are most excellent men personally and professionally, as I know from a long and pleasant acquaintance with them, and yet ground has been steadily lost until, probably to an extent not true of any other state in the Union, it is a veritable paradise for quackery in every conceivable form.

As I came in close touch with the profession in every section of the state it was easy to gather information bearing directly on the reasons for this condition of affairs, and I became very much interested in it.

As the result of careful and protracted investigation I became convinced that the medical laws have been practically broken down and that the profession and people do not receive the protection from quackery to which they are entitled under the plain letter as well as the spirit of the laws, because the organized profession and the State Board of Health do not coöperate in securing and enforcing legislation. This work is sufficiently difficult anywhere with all of these agencies united, and it is foredoomed to failure where they are divided. The secretary of the State Board of Health wrote me that he is sure that he has back of him the support of the rank and file of the profession, but I found constant evidence that he is mistaken on this point, and this opinion was confirmed by those to whom he referred me for information. The more or less open antagonism between the leaders of the state society and the board has begotten a spirit of apathy and hopelessness about improving and enforcing both the medical and health laws almost coextensive with the state, and with such a state of affairs it ought not to be surprising that the united forces of quackery have had an easy time of it.

And yet I got the impression that these evils were traceable to faults in the system, and the misconceptions and misunderstandings inseparable therefrom, rather than to the mistakes or wrongdoing of any individual or faction. A State Board of Health and a State Board of Medical Examiners, whether joint or separate, should in fact be the executive committee and mouthpiece of the state societies of the several schools of practice in all matters pertaining to their duties, and they can not hope to attain to any great degree of usefulness until this is practically realized. This is often done by a tacit understanding between the appointing power and the profession, under which the societies suggest and practically nominate their representatives as vacancies occur, but more frequently under express provision of law. This takes the board out of politics, except of the right kind, makes each school of practice responsible for the selection and conduct of its representatives, and, probably more important than all, gives the board the support of the united profession of every school, not only in securing and enforcing legislation, but in so educating public sentiment as to make all of its work effective. This is the more important because there is the same need for the coördination of all of these forces in securing and enforcing health legislation for cities, towns and country districts.

With the exercise of a little tact, good judgment and personal tolerance on the part of all concerned I am almost certain that all of this could be brought about without any change of personnel in the board. My idea would be for the presidents of the State Medical Society and the State Board of Health to get together and call a joint conference of the council and board for such a full, frank and dispassionate discussion as would enable them to wash off the slate and begin over. Existing conditions should be considered intolerable, and, in view of the importance of a union of all available forces in bringing about a better state of affairs, if there be any in either body not big enough and broad enough to lay aside petty personal prejudices and apparent interests and look to the future in this spirit, resignations should be requested and accepted without hesitation until this can be accomplished. The Board should be given representation in the House of

Delegates of the State Society through its president and secretary for the encouragement of cordial relations, and the constitution and by-laws should be so amended.

The office of secretary and editor of the State Society should be combined in one person, and, in such a state as Illinois, he should devote his entire time to the duties of the office. It is important also that the closest relations should exist between this office and that of the State Board of Health. The *Illinois State Medical Journal* can, and should, give constant support and publicity to the work of the board, and the two interests be considered in every way inseparable. I am satisfied, too, that the councilor districts should be made smaller and that more young men should be put in this work. The older men were the most active, and their advice seemed invaluable in the meetings of the council, but I was constantly impressed with the injustice of asking these men, covered with years and honor, to do a kind of labor which was intended for young men who have their spurs to win.

It is made my duty when I visit a state to report conditions and to make suggestions, kindly, considerately, helpfully. I found a great profession in this state, to which anything is possible, favorably situated in many respects, and yet with so many of the best men working at cross purposes, or not working at all, as to retard the progress all are anxious to make. Nearly all of them are my personal friends, but so sensitive to criticism, as all doctors are, that my task has been beset with many difficulties, especially when I know that to give offense to any of them is likely to defeat the conciliation essential to the ends I have in view. But if what I advise can be taken by all concerned in the spirit in which it is written, and a real attempt made to put the suggestions into operation, it can not but mean the dawn of a new day for the power and influence of the profession of Illinois.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Diseases of the Respiratory System.

LARYNGITIS.

In the treatment of laryngitis Colbeck and Chapin state that the local treatment consists in the employment of vapors, insufflations and sprays.

In the form of vapors the following are recommended:

℞ Tinct. benzoini co.....ʒi 30

Sig.: One teaspoonful to be floated on a pint of hot water and the steam inhaled. Or:

℞ Olei eucalypti.....m. xl 2|65
Magnesii carb.....gr. xxiv 1|50
Aquæ dest. .....fʒi 30|

M. One teaspoonful to be floated on a pint of hot water and the steam inhaled. Or:

℞ Terebeni .....m. xl 2|65
Magnesii carb.....gr. xxv 1|65
Aquæ dest. .....f. ʒi 30|

M. Sig.: One teaspoonful to be floated on a pint of hot water and the steam inhaled.

The object of adding the magnesium carbonate in the foregoing combinations is to suspend the oil.

INSUFFLATIONS.

As insufflations the authors recommend the following:

℞ Iodoformi
Acidi borici
Bismuthi subnit., āā.....gr. i |06

M. Ft. insufflatis. To be used occasionally. Or:

℞ Glycerini acidi tannici.....fʒi 4|
Aquæ dest. .....fʒi 30|

M. Sig.: To be used occasionally. Or:

℞ Sodii bicarb.....gr. xv 1|
Sodii chloridi.....gr. x |65
Glycerini boracis .....fʒiss 6|
Glycerini acidi carbol.....fʒss 2|
Aquæ dest. q. s. ad.....fʒi 30|

M. Ft. Nebula. Sig.: To be used as a spray as directed.

Sometimes a spray containing cocain may be required. In such instances, the following combination is recommended, used under the physician's personal directions:

℞ Cocainæ hydrochlor.....gr. x |65
Thymolis .....gr. ss |03
Aquæ .....fʒi 30|

M. Sig.: Use as a spray under the physicians directions.

BRONCHITIS.

In the treatment of acute bronchitis the most important preparations are ipecacuanha, antimony and alkalies:

℞ Vini antimonialis.....m. x |65
Potass. nitratis.....gr. v |30
Spts. etheris nitrosi.....fʒss 2|
Liq. ammon. acetatis.....fʒii 8|
Syr. aurantii .....fʒiss 6|
Aquæ camphoræ q. s. ad.....fʒi 30|

M. Ft. mistura. Sig.: Two tablespoonsful to be taken every four hours in water. Or:

℞ Liq. ammon. acetatis.....fʒii 8|
Vini ipecacuanhæ.....m. x |65
Syr. aurantii .....fʒss 2|
Aquæ camphoræ q. s. ad.....fʒi 30|

Ft. mistura. Sig.: Two tablespoonsful every six hours.

When the secretion has become more abundant a more stimulating expectorant must be employed. In the transitional stage the following is of value:

℞ Vini antimonialis .....m. xv 1|
Ammon. chloridi.....gr. vii |50
Spts. chloroformi.....m. x |65
Syr. aurantii .....fʒi 4|
Aquæ camphoræ q. s. ad.....fʒi 30|

M. Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day in water. Or:

℞ Ammon. carb.....gr. v |30
Vini ipecacuanhæ.....m. x |65
Syr. aurantii .....fʒi 4|
Aquæ camphoræ q. s. ad.....fʒi 30|

M. Ft. mistura. Sig.: Two tablespoonsful t. i. d. in water.

When the attack is purely chronic and attended with profuse expectoration, stimulating expectorants are indicated:

℞ Ammon. carb.....gr. v |30
Spts. chloroformi.....m. xv 1|
Tinct. nucis vomicæ.....m. iv |25
Syr. simplicis q. s. ad.....fʒi 30|

M. Ft. mistura. Sig.: Two tablespoonsful three times a day in water. Or:

℞ Acti scillæ |
Tinct. opii camphoratæ, āā.....m. xx 1|30
Infusi cascarillæ q. s. ad.....fʒi 30|

M. Sig.: Two tablespoonsful t. i. d. in water. Or:

℞ Potassii iodidi.....gr. iv |25
Potassii bicarb.....gr. xv 1|
Ammon. carb.....gr. iii |20
Aquæ camphoratæ q. s. ad.....fʒi 30|

M. Sig.: Two tablespoonsful three times a day in water. Or:

℞ Vini ipecacuanhæ.....m. x |65
Tinct. opii.....m. v |30
Potassii nitratis.....gr. v |30
Fld. ext. glycyrrhizæ.....fʒss 2|
Aquæ dest. q. s. ad.....fʒi 30|

Ft. mistura. Sig.: Two tablespoonsful t. i. d. in water.

BRONCHIECTASIS.

This condition can not be treated with any marked success by drugs. The fetor may be controlled by installations on a piece of sponge in an ordinary respirator as follows:

℞ Thymolis |
Camphoræ, āā .....gr. ii |12
Acidi carbol.....m. ii |12
Spts. rectificati.....m. xx 1|30

M. Ft. instillatio. Sig.: A few drops to be placed on a sponge and inhaled. Or:

℞ Olei pini |
Alcoholis absoluti, āā.....fʒi 4|

M. Ft. instillatio. Sig.: A few drops to be placed on a sponge and the vapor inhaled. Or:

℞ Iodoformi .....gr. i |06
Olei eucalypti |
Spts. vini rectif., āā.....m. x |65

M. Ft. instillatio. Sig.: To be inhaled from a sponge.

Mixtures containing aromatic balsams are also recommended by the authors in some cases:

R. Tinct. benzoini co.		
Tinct. tolutani		
Tinct. camph. comp., āā.....m. xx	1	30
Misturæ amygdalæ q. s. ad.....fʒi	30	

M. Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day in water. Or:

R. Morphinæ hydrochlor.....gr. 1/4		015
Bismuthi subnit.		
Pulv. amyli, āā.....gr. i		06

M. Ft. insufflatio. Sig.: To be used only as directed by the physician.

SPRAYS.

Sprays, when properly applied, are of great value in the treatment of laryngitis. For this purpose the following combinations are recommended:

R. Acidi carbolici.....gr. iii		20
Aquæ dest. .....fʒi	30	

M. Sig.: To be used as a spray when necessary.

Common Secondary Symptoms of Diabetes.

A. C. Croftan in an abstract in *Medicine*, states that the complications of diabetes as a rule disappear with the lessening of the glycosuria.

Among the most distressing complications are those connected with the mouth and teeth. For this reason, all diabetics should be instructed to cleanse the mouth thoroughly after each meal. This may be done by using a 3 per cent. sodium carbonate solution in warm water to which a few drops of the tincture of eucalyptus is added. Most diabetics have an excessively fetid breath and to correct this Croftan recommends the following combination as a mouth wash:

R. Betanaphthol .....gr. iii		20
Sodii biboratis 3iiss	10	
Aquæ menthæ pip.....fʒiv	120	
Aquæ dest., q. s. ad.....Oi	500	

M. Sig.: Use as a mouth wash.

If the gums are painful and bleeding the following combination is recommended:

R. Tinct. opii.....m. xv		1
Potass. chloratis.		
Sodii biboratis, āā.....3i		4
Decoctio altheæ rad., q. s. ad.....Oi		500

M. Sig.: Use as a mouth wash.

Pruritus which may be general or local around the genitals may be relieved by the application of anodyne powders or ointments.

When dyspeptic symptoms arise, with vomiting, Croftan recommends the withdrawal of all foods and the administration of cerium oxalate in one grain doses, oft repeated, or small doses of cocain. In many cases, teaspoonful doses of a 2 per cent chloroform water frequently gives relief, as do hot or cold applications to the epigastric region.

Catarrh of the bowel is a serious complication of diabetes and should be met promptly and treated energetically. For this purpose he advises such preparations as bismuth, extract of opium and tannic acid until the diarrhea has been checked.

If constipation arises it may hasten the onset of a comatose condition. It can be overcome by fat feeding, saline waters, or the following combination:

R. Glycerini .....f. 3iss	6	
Acidi citrici 3ii	8	
Aquæ ..... Oi	500	

M. Sig.: Use as a beverage.

Gangrene is perhaps the most distressing condition that may arise in the course of diabetes and Croftan states that the diet should never be free from carbohydrates after this symptom has arisen, and that from 50 to 100 grams of white bread should be given at proper intervals.

In individuals having a marked arteriosclerosis with continuous pain, tingling or hyperesthesia in the extremities, a hot foot bath and massage should be given in order to stimulate the return of fluid and in this way prevent the onset of gangrene.

Medicolegal

Routine for Bills Incurred by Public in Epidemic.

The Supreme Court of Michigan says, in the mandamus case of Dawe vs. the Board of Health of the City of Monroe, brought by a physician, that, in January, 1906, an epidemic of diphtheria and scarlet fever broke out in St. Francis Home, a charitable institution for the care of boys in Monroe. The physician, claiming to have been employed by the board of health, presented his bill for services, amounting to $372.50. It was admitted that this bill was ordered by the board of health certified to the board of supervisors; that it was certified, but the board of supervisors, refusing to accept the form of the certificate, referred the bill back to the board of health. The board of health subsequently, on March 16, rescinded its resolution and ordered the bill sent back to the board of supervisors, with the statement that the services were not rendered in pursuance of an order of the board of health. A new board of health was elected in April. May 20 the physician applied for a mandamus to compel the board of health to audit, allow, and certify his bill for such sum as should be reasonable, to the board of supervisors.

Under Act No. 7 of the Public Acts of Michigan of 1903, the Supreme Court goes on to say, the auditing of bills incurred by the public in case of infectious and dangerous communicable diseases is lodged in the board of supervisors of the county. The local board of health is required by said act to keep an itemized and separate statement of expenses and render the same to the board of supervisors by filing the same with the county clerk. The entire responsibility then rests on the board of supervisors to pass on the necessity of such expenses, the services performed, the justice and reasonableness thereof, and to allow such parts thereof as the board shall deem just. It appears that the itemized bill of this physician was presented to the board of health and by the latter filed with the clerk of the circuit court, as the law requires. The certificate to which the board of supervisors objected is not found in the record, and this court cannot therefore determine its sufficiency. The statute does not in terms require any certificate.

The action of the board of health is not affected by the fact of a change in its members; and such change is no objection to this proceeding on the part of the physician. If his itemized statement was rendered to the board of supervisors by the authority of the board of health, it was the duty of the board of supervisors to proceed to audit the account. If the employment of the physician by the board of health was denied, an issue of fact is presented for the determination of the board of supervisors, and it is the duty of the latter board to determine whether the board of health made a contract for the physician's services. Act No. 7 refers all such issues of fact to the board of supervisors. The court has not before it a case where a board of health denies a contract, and for that reason refuses to make the statement to the board of supervisors. An itemized statement was rendered. On this record the physician's account is properly before the board of supervisors for action, and they should proceed to hear it.

The order of the circuit court refusing to frame issues between the physician and the board of health as to whether (1) he was employed to render the services for which he charged, and (2), if so, what was a reasonable compensation for such services, is therefore affirmed.

Power to Revoke Certificate for Fraud Antedating Law.

The Supreme Court of Wisconsin says of State vs. Schaeffer that this was an action commenced Dec. 21, 1905, to revoke and annul the certificate of registration issued to the defendant by the Wisconsin Board of Medical Examiners Sept. 25, 1899, pursuant to Chapter 87 of the Laws of 1899. The action was based on a verified complaint in writing made by the secretary of said board, charging the defendant with having procured such certificate by fraud and perjury and through error, as prescribed by Chapter 422 of the Laws of 1905. This was met with the contention that the circuit court had no power to revoke or annul the certificate, although obtained by fraud, perjury and misrepresentation, as alleged, for the sim-

ple reason that it was issued prior to the passage of the Act of 1905.

Chapter 422 of the Laws of 1905, which went into effect June 23, 1905, among other things, declares that: "The circuit courts of this state are hereby vested with jurisdiction and power to revoke and annul any license or certificate of registration which has been heretofore or which may be hereafter issued to any person to practice medicine or surgery, or osteopathy in this state, who is guilty of immoral, dishonorable or unprofessional conduct, after the passage of this act or who has procured such license or certificate of registration by fraud or perjury, or where the same was obtained through error." It was contended that the act is not retroactive, and therefore that the complaint did not state a cause of action. This was based on the claim that the words, "after the passage of this act," in the portion of the act above quoted, qualify the entire clause so quoted. And so it was claimed that, not only must the dishonorable and unprofessional conduct therein mentioned occur after the passage of the act, but also that the fraud, perjury or error for which it is sought to annul the certificate must also have occurred after the passage of the act.

The Supreme Court answers that it should be slow to hold that the circuit court has no jurisdiction or power to set aside a certificate of registration thus obtained, even in the absence of the act in question. But it is unnecessary to consider that question here, since the act declares, in effect, that such court may "revoke and annul any license or certificate of registration which has been . . . procured . . . by fraud or perjury, or where the same has been obtained through error." The word "heretofore," in the portion of the act quoted, manifestly refers to "any license or certificate of registration" issued prior to the passage of the act. So the act declares, in effect, that such practitioner "who is guilty of immoral, dishonorable or unprofessional conduct," as defined therein, "after the passage of the act," may have his license or certificate of registration revoked or annuled, even though it was obtained without fraud or perjury or misrepresentation. The manifest purpose of the act is to prevent any incompetent or unfit person from practicing medicine or surgery or osteopathy, and thus protect the public from the injuries which might otherwise be incurred. The court must hold that the act is retroactive to the extent indicated. Nor does the court think that with such construction Chapter 422 is unconstitutional and void.

This not being an action to enforce a penalty or forfeiture, but a civil action to set aside a certificate of registration for the reasons stated, the court says that it perceives no ground for the claim that the action is barred by the two years' statute of limitation, or the three years' statute of limitation, or any other statute of limitation.

Lastly, this action was brought in the name of the State of Wisconsin, and the Wisconsin State Board of Medical Examiners was not a party, but the court perceives no ground for claiming that there was a defect of parties.

Allowing Physician to Testify Authorizes It in New Trial.

The Supreme Court of Missouri, Division No. 2, holds, on the appeal after the third trial in the personal injury case of Mollie Elliott and another vs. Kansas City, that a physician having been allowed to testify in the first two trials without any objections on the part of the plaintiffs, Mrs. Elliott had waived her right to forbid the repetition of the physician's testimony in the third trial to substantially the same facts with regard to his treatment of her previous to the accident complained of. The court says that the expressions by the courts having the question in judgment before them, are almost uniform that the purpose sought by the prohibition contained in the statute against disclosing professional information is for the purpose of allowing greater freedom between physician and patient, and was enacted as a matter of public policy to confer on persons seeking the services of a physician a personal privilege, and closing the door to the sickroom, and of preventing the publishing to the world their infirmities. That this privilege may be waived all the authorities agree. It is equally well settled, as was said in Fox vs. Turnpike Co., 59 App. Div. 363, 69 N. Y. Supp. 551, that "when a patient voluntarily opens the door of the consultation room and gives a view that may have been specially arranged for the purpose, it would not be in accordance with the spirit of the statute or the interest of truth to shut the door against a view to be described by the physician." With respect to the contention that a distinction was to be made in this case for the reason that in the former trials the plaintiff did not introduce the physician, the court declares it sufficient to say of that contention that the purpose of judicial investigation is, and should be, to ascertain the truth surrounding the transaction to be judicially determined, and that it is unable to make any distinction as to the application of the doctrine of waiver, where the patient herself opens the door to the sickroom, and where she consents and acquiesces in some one else opening such door. In principle there is no difference. In this case the physician's testimony could have only been introduced on the two former trials with the plaintiff's consent and acquiescence, and the presumption must be indulged, having made no objections to his testimony in the former trials and having testified without any objections, that such testimony was given with her full consent and acquiescence. The physician having testified in the former trials without any objections, the reason for the enforcement of the rule in respect to the privilege conferred by the statute ceased to exist; and while this court has uniformly granted this personal privilege when timely invoked, it is unwilling to approve of the action of the trial court in excluding the testimony of the physician in the third trial, where such personal privilege has been so clearly waived in excluding relevant testimony, where such action can in no way tend to accomplish the purpose sought to be acomplished by the act conferring such personal privilege. It was error to exclude the testimony of the physician.

A Federal Court's View of Privileged Communications.

The United States Circuit Court of Appeals, Second Circuit, holds, in Pennsylvania Railroad Co. vs. Durkee, a personal injury case brought by the latter party, that there was no error in refusing to instruct the jury that they had a right to infer from the refusal of the plaintiff to permit a physician to testify as to what he treated her for and what he found her condition to be, that his testimony would be unfavorable to her, and in charging the jury, on the other hand, that it was her privilege and her right, awarded to her by the law, to object to her physician giving any evidence, and that the jury were not permitted to infer, because she exercised that right, that the physician would have given evidence in one way or the other, favorable or unfavorable; simply, the law boldly and wholly shut it out, except at her instigation; but that she was treated by the physician appeared according to his statement, and the jury had a right to consider that fact, and only that, as far as his evidence was concerned.

In explicit and peremptory language, Section 834 of the New York Code of Civil Procedure, the statute involved in this case, forbids the physician, the court says, from disclosing any information obtained in a professional capacity, and it is not apparent why such prohibition should not bind him, whether the plaintiff sits silent or raises an objection. Until the express waiver in open court, which section 836 provides for, it is the duty of the witness to refuse to betray the confidence reposed in him as a professional man, and the trial judge would no doubt of his own motion prevent any disclosures which the statute forbids. Had it been the intention of the legislature that the prohibition of the statute should be operative only when the patient took affirmative action to exclude the testimony by interposing an objection, presumably it would have used language appropriate to indicate such an intention. On the contrary, it has placed the prohibition on the statute book, to be lifted only on the taking of express affirmative action by the patient to obtain a disclosure by the physician. The situation is very different from that arising when a party to a civil action, who apparently must be cognizant of the fact of some controverted issue, avoids cross-examination by not going on the witness stand, or persuades some witness to remain out of reach of a subpoena, or destroys documentary evidence. The prohibition against disclosure of professional

secrets is manifestly an exercise of public policy. It secures a right to every individual which he is under no obligations to waive or abandon. To hold that, because the patient does not waive or abandon the prohibition, inferences adverse to his side of the controversy may be drawn by the jury, would be to fritter away the protection it was intended to afford. When it is the legal right of a party not to have some specific piece of testimony marshaled against him, he may exercise that right without making it the subject of comment for the jury.

The above discussion the court introduces with the statement that it was asserted that the privilege accorded to the patient under Section 834 may be waived by failure to object, and cannot be rendered effectual except by the interposition of an objection, but that no cases were cited in support of this proposition, and in the absence of any controlling decision the court would be inclined to hold the converse. On a petition for rehearing, which it denies, it says that authorities were then cited which were not on the original briefs, indicating that in the state courts the privileged testimony is admitted unless objection is interposed, but that circumstance does not modify the conclusion expressed in the opinion disposing of the cause, namely, that the trial judge correctly instructed the jury because the rule as to drawing unfavorable inferences from failure to produce testimony is not to be applied where the law, on grounds of public policy, has established privileges against being compelled to produce it.

Public Buildings and Cars to Be Disinfected.

Chapter 112 of the Laws of Mississippi of 1906, provides that it shall be the duty of the State Board of Health to prepare rules and regulations governing the proper disinfection and sanitation of public buildings, railroad depots, and all railway coaches and sleeping cars operating in that state. The board shall prescribe a sanitary code, which shall contain and provide rules and regulations of a general nature for the improvement and amelioration of the hygienic and sanitary condition of said public buildings, railroad depots, railway coaches and sleeping-cars. Then, every person having control of any public building, railroad depot, railway company, sleeping car company, or other corporation, company, or individual, or the receiver thereof, engaged in the carrying of passengers in the state, shall at their own expense, within a prescribed time after receiving notice from the state board of health of the promulgation of the above mentioned rules and regulations, carry the same into effect.

Current Medical Literature

AMERICAN.

Medical Record, New York.

December 22.

1 *Diagnosis and Result of Surgical Treatment of Cerebellar Tumors. B. Sachs, New York.
2 *Chronic Urethritis and an Improved Method of Applying Medication to the Urethra. J. A. Gardner, Buffalo.
3 *Gelatin Method of Preserving Specimens. W. H. Watters, Boston.
4 Treatment of La Grippe. C. E. Nammack, New York.
5 *Value of the Differential Leucocyte Count in Gynecology and Abdominal Surgery. F. E. Sondern, New York.
6 Psychiatric Clinic at Munich, with Notes on Some Clinical Psychologic Methods. G. H. Kirby, New York.
7 *Pruritus Ani. T. C. Hill, Boston.

December 29.

8 *Sensibility of Abdominal Organs and the Influence on It of Injections of Cocain. L. Kast and S. J. Meltzer, New York.
9 *Schlösser's Treatment for Trigeminus Neuralgia. O. Kiliani, New York.
10 *X-Ray vs. Surgery in Sarcoma. A. Judd, New York.
11 *Notes on Fevers in the Tropics. E. S. Goodhue, Holualoa, Kona, Hawaii.
12 Bursting of the Standardization Bubble. W. J. Robinson, New York.
13 *A Plea for the Simple Round Ligament Ventrosuspension. B. S. Talmey, New York.

1. **Diagnosis and Surgical Treatment of Cerebellar Tumors.**—Sachs declares that other things being equal, rapidly advancing optic neuritis may serve as a symptom pointing to cerebellar tumor. The early development of unilateral or bilateral rectus externus palsy is to be given due weight. He regards this symptom as almost pathognomonic of cerebellar lesions if it is associated with the general symptoms pointing to increased intracranial pressure. Sachs believes that when the diagnosis is made and when there is a fair degree of certainty as to the special part involved, a large trephine opening should be made over the suspected area. Even if the neoplasm is not found, much good will be done by the relief of pressure.

2. **Medication to Urethra in Chronic Urethritis.**—Gardner claims that the most rational method of forestalling a stricture is by packing the urethra. The medication is in close contact for hours with the follicles and depressions, where germs are protected from irrigations and injections. The exudate thrown out around these follicles is frequently the starting point of stricture. No other treatment combines so many beneficial factors, i. e., dilatation, massage and medication uniformly applied to the entire membrane and depressions for a considerable length of time.

3. **Gelatin Method of Preserving Specimens.**—Watters sums up the advantages of his method practically as follows: The permanency of the mounts is noticeable. The preparations are very compact and neat. They are easily adaptable to class demonstration. They are used both as hand specimens and in the reflectoscope. The specimens first mounted nearly six years ago and which have been almost continually in the light show no appreciable loss of color. These specimens show a wonderful resistance to exposure to both high and low temperatures. For a full description of this method the reader is referred to the original article. Its length prohibits any attempt at giving an abstract sufficiently brief to describe accurately the method.

5. **Value of Differential Leucocyte Count.**—Sondern says that his continued daily contact with cases in which the diagnostic aid of the differential leucocyte count is sought strengthens rather than weakens his belief in this valuable factor in surgical diagnosis. It presents diagnostic and prognostic data at a time when the clinical picture may be confusing.

7. **Pruritus Ani.**—Hill considers nitrate of silver and citrin ointment excellent applications in most cases. For delicate skins the following ointment may be substituted for the citrin: Red oxid of mercury, three drams; Venice turpentine, one ounce; lanolin, three ounces.

8. **Influence of Cocain on Sensibility of Abdominal Organs.**—Kast and Meltzer found in animal experimentation that the sense of pain is present in normal organs, and that it is considerably augmented in inflamed organs; and that a subcutaneous or intramuscular injection of cocain is capable of completely abolishing this sensation in normal as well as in inflamed organs. They suggest that the anesthesia of the internal abdominal organs observed by certain surgeons was due to the use of cocain. These investigators also found that the injection of a small dose of cocain has a calming influence on the excitation of the narcotized animals operated on. These new observations are capable of practical application in medicine.

9. **Schlösser's Treatment for Trigeminus Neuralgia.**—Kiliani describes the technic of this treatment. The injection of alcohol is done without narcosis. When the injection has been successful there results for a minute or two a sharp, burning pain, similar to a mild attack. After an hour or so there is sometimes severe pain for one or two hours, interrupted by typical attacks. If skilfully executed the injection is said to be without danger, and its effect is excellent. The treatment is not limited to trigeminal neuralgia. Kiliani states that he has not had a single failure in the use of this method.

10. **X-Ray vs. Surgery in Sarcoma.**—Judd says that the use of the *x*-ray in cases of sarcoma is still more or less an open question. In cases in which operation for any reason is not feasible, the surgeon is compelled to weigh the chances of radiology in effecting a cure. Of 14 cases reported by Judd, 5 patients are dead or unimproved, 5 have no further symptoms of malignancy and 2 are somewhat improved. The paper is not a plea for the use of the *x*-ray in sarcoma, but rather an effort to put this agent in its proper place.

11. **Fevers in the Tropics.**—In reference to Hawaiian fever, Goodhue says that while the morphologic findings are ex-

tremely interesting, they are far from conclusive; and the clinical differences are not so marked that they can not be included under some form of typhoid fever. In regard to malaria, it has been said that the amount of physical incapacity caused among laborers by this disease is far greater than that from all the other diseases combined. Malta fever deserves careful study because its early stages are easily confounded with malaria, while later it closely resembles chronic rheumatism. Among the other fevers which Goodhue discusses are yellow fever, dengue or breakbone fever, and "swollen-head" fever.

13. **Simple Round-Ligament Ventrosuspension.**—Talmey describes the method, which he has used for six years, of suspending the retrodisplaced uterus in women of child-bearing age, as follows: The abdominal incision of about 6 cm. is made in the linea alba, beginning immediately above the pubis. The recti muscles are separated, and the peritoneum is incised. The uterus is located and any adhesions are freed. The uterus is grasped at its posterior surface by a tenaculum and held in position. The round ligament is then located and is followed to the uterus. At this end the first suture of chromicized catgut is inserted and passed through the rectus muscle about 2 cm. from the abdominal incision and about 3 cm. above the symphysis. Another suture is inserted through the round ligament 1 cm. distally from the first, and in the same way it is passed through the rectus muscle. This procedure is repeated on the other side, and the sutures are all tied and the abdomen is closed. After the operation a pessary is placed in the vagina, where it remains until the patient leaves her bed. The chief advantage of this method is said to be that the operation is universally applicable and entirely satisfactory, and that the uterus is placed in the most physiologic position.

New York Medical Journal.

December 22.

14 Paralysis of the Peroneal Nerve Following Childbirth. J. H. Lloyd, Philadelphia.
15 *Otology in Its Relation to the General Practitioner. G. Bacon, New York.
16 Rhinitis in Children, Including Recurrent Coryza, Due to Intestinal Autointoxication. L. Fischer, New York.
17 Disease in Manila. P. G. Woolley, Phrapatoom, Siam.
18 Tuboabdominal Pregnancy Secondary to an Incomplete Tubal Abortion. B. S. Talmey, New York.
19 *Is the Supposed Efficacy of Quinin in Malaria More Apparent than Real? A. C. Jacobson, Brooklyn, N. Y.
20 The Senile State and Its Treatment. S. N. Leo, New York.
21 Peptic Ulcer of Jejunum, Following Gastroenterostomy, for Perforating Gastric Ulcer. W. G. Lyle, New York.
22 Scope of the Federal Food and Drugs Act. H. W. Wiley, Washington.

December 29.

23 *Errors in the Treatment of Cutaneous Cancers. A. R. Robinson, New York.
24 Physiology of Language and Its Relation to the Treatment of Stammering. G. Hudson Makuen, Philadelphia.
25 Two Cases of Hepatic Abscess Treated by the Transpleural Operation. H. Taylor, Glenview, Llandovery, South Wales.
26 Mastoiditis and Temperosphenoidal Abscess. S. Oppenheimer, New York.
27 Surgical Treatment of Gastric Ulcer. M. R. Barker, Chicago.
28 *Odds and Ends in a Series of Three Hundred Obstetrical Cases in Private Practice. P. Bisher, New York.
29 Eyestrain as a Factor in Headache. L. Emerson, Orange, N. J.
30 Diver's Paralysis with Scarlet Fever? R. Ellis, New York.

15. **Otology in Relation to the General Practitioner.**—Bacon claims that the graduate in medicine of to-day should be competent not only to recognize the drumhead in health and disease by means of the head mirror and speculum, but also to incise it in cases of emergency. He should make frequent and regular examinations of the ear during the acute exanthematous diseases and also in grippe, especially in the case of children, from the fact that the pain may be very slight and in some cases altogether absent. High temperature in children should always cause suspicion of an aural affection. In chronic otorrhœa the surgeon should distinguish between the operative and non-operative cases, and he should never unnecessarily alarm the patient by advising an immediate operation, until he has made a thorough examination and satisfied himself that the case is an urgent one, and can not be cured by conservative methods.

19. **Quinin in Malarial Fever.**—In Jacobson's opinion quinin will check or postpone malarial paroxysms, and, if its administration be long continued in moderate but very frequently repeated doses, the blood being kept more or less saturated with it, paroxysms will not, as a rule, occur. That is to say, the plasmodia will be driven out of the blood stream and kept out so long as sufficient quinin is administered and absorbed. On the withdrawal of the quinin the plasmodia re-enters the blood. Hence, he says, quinin is at best only a palliative; it is not curative, and it certainly is not a specific in any sense of the word. Jacobson says that the absolute withholding of quinin during acute malarial attacks will expedite ultimate cure. Instead of the disease process being merely held in check, the plasmodia at bay—a result attained at the cost of leucocytic paralysis—Nature is given a chance to fight her enemies in the open, unsubjected to a galling cross fire from her own alleged allies.

23. **Treatment of Skin Cancer.**—Robinson summarizes his paper as follows:

1. Every case of cutaneous cancer demands special consideration, special study, and special selective treatment.
2. No one method of treatment of cancer is best or most efficient for all cases of operable cancer.
3. All cases of multiple cutaneous cancer and all aged persons with cutaneous cancer require internal treatment in the form of diet and drugs in addition to local measures. A diet of milk and green vegetables and the avoidance of meats in general and of meats of such organs as liver and kidneys in particular, and the avoidance of alcohols, is advisable in all cases of cancer, whether external or internal. Thyroid extract should be given in as large doses as can be borne in all cases in which there is a senile condition of the skin and in most superficial epitheliomata.
4. A knowledge of the kind of cancer present, the pathologic anatomy, and the manner of extension of the disease in general and of the special variety of the case to be treated is necessary to a correct choice of method of treatment.
5. When possible all patients should be under observation at least one year after commencing treatment of any kind, in order to treat promptly any recurrence of the disease.
6. Early diagnosis and correct treatment place cutaneous cancers among that class of diseases which do not deserve the name of incurable diseases, as almost without exception they can be treated successfully if the method employed be the correct one.

28. **Statistics of Three Hundred Obstetric Cases.**—Of the 70 primiparæ in Bisher's series, ranging in ages from 17 years up to 42 years, the use of forceps was resorted to in 18 cases, or in 27 per cent., as compared with the usual statistics of 40 to 50 per cent. forceps applications in primiparæ. Laceration of the perineum of varying degree occurred in all the forceps cases, but none in the normal deliveries. In two of the forceps cases, though the patient was fully anesthetized, a spontaneous expulsion of the head was caused by a sudden pain, thus proving the importance of constant vigilance and hold on the instruments. The usual duration of labor prior to application of forceps was 20 hours, and the only cause for it was uterine inertia. The placenta was delivered by Credé's method soon after delivery of the child in order to prevent a postpartum hemorrhage and the better to control the uterus. In four primiparæ an occiput posterior was the complicating feature, necessitating delivery by forceps with a resulting slight laceration of the perineum. In two of the primiparæ the foot was the presenting part, and delivery was accomplished in the usual way. The average number of days the women were kept in bed was eight, though 2 women were up on the third day doing their housework, and one after a difficult forceps delivery was sitting up and combing her hair within 18 hours after delivery.

In none of the primiparæ did the temperature at any time reach above 100 F., and none developed a mastitis, though sore nipples occurred in almost all. The same holds true in all of the 300 cases, except that the complication of sore nipples was less frequent in multiparæ. After about 110 uncomplicated cases, barring forceps applications, 4 transverse presentations with a prolapse of an arm occurred successively within 10 days. Two more of the same nature followed within 3 months, or one case of this nature in 50, where statistics give one in 250.

As for complications in multiparæ, first in order of frequency were twin pregnancies, numbering 11 cases, or one in 27 cases, where statistically there should be one in 90 cases. Among the positions, the first fetus in 7 cases presented head first, in the remaining 4 the breech was the presenting part. The second fetus in 5 cases presented transversely, necessitating version and podalic extraction. Six of the 22

children died within 2 days of delivery. The others remained alive up to the time of discharging the patient. There occurred two cases of placenta prævia, one in 150, statistically one in 573 cases, with recovery of mothers and children. One case of accidental hemorrhage in the ninth pregnancy; one case of face presentation and one of eclampsia were the other complicating features among the multiparæ. The absence of a prolapse of the cord among all the cases is worthy of notice. The use of forceps was resorted to in about 10 per cent. of the multiparæ, the main cause being uterine inertia. A very active postpartum hemorrhage was encountered in one patient in each of her consecutive deliveries. This woman has not menstruated for seven years, for her pregnancies followed in rapid succession at the end of the lactation period. An eclampsia occurring in the second pregnancy resulted in leaving the mother partially blind up to the present time, three years after the incident, the child surviving rapid delivery. The placenta required a manual delivery in 15 patients of the whole series after waiting for 45 minutes, and in each case an attachment somewhere to the uterine wall was the cause of it.

The fetal mortality of 4 in all of the 300 deliveries occurred from the following causes: One in the case of accidental hemorrhage due to partial separation of the placenta; one fetus was born dead after a breech delivery in a multipara; one in a patient who twice previously gave birth to a dead fetus, the cause was not ascertainable. One was born dead of a primipara whose husband is an epileptic. Ophthalmia occurred in none of the children though the instillation of silver nitrate has not been practiced by Bisher. His rule is to use a 2 per cent. warm boric acid solution as a wash for the eye and mouth immediately on the birth of the child.

Lancet-Clinic, Cincinnati.

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31 Diagnostic Eye Findings in Arteriosclerosis (Angiosclerosis). G. F. Suker, Chicago.
32 Appendicitis Complicating Pregnancy. E. Ricketts, Cincinnati.

St. Louis Medical Review.

December 22.

33 A Case in Which Sinking Spells Thousands of Them—Sick Headache, Vomiting, Etc., Were Due to Eyestrain. G. M. Gould, Philadelphia.
34 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

Surgery, Gynecology and Obstetrics, Chicago.

December.

35 Senile Parenchymatous Hypertrophy of the Female Breast. J. C. Bloodgood, Baltimore.
36 *Peripheral Versus Intracranial Operations for Tic Douloureux. C. H. Mayo, Rochester, Minn.
37 *Tendon Tissue Versus Catgut Ligatures. N. Senn, Chicago.
38 Vaccine Therapy and Passive Hyperemia in Surgery. J. C. Hollister, Chicago.
39 *Bloodless Methods of Artificial Dilatation of the Cervix Uteri at Full Term. H. F. Lewis, Chicago.
40 *Bloody Methods of Rapid Dilatation. R. W. Holmes, Chicago.
41 *A Review of Over Fourteen Thousand Surgical Anesthesias. A. Magaw, Rochester, Minn.
42 Plastic Surgery of the Eyelids by the Use of Pedunculated Doubled Skin Flaps. H. Leischner, Vienna, Austria.
43 Amputation of the Cervix with the Aid of an Intrauterine Tenaculum. R. C. Coffey, Portland, Ore.
44 Technic of the Chicago Lying-in Hospital and Dispensary. J. B. De Lee, Chicago.

36. **Operations for Tic Douloureux.**—After removing the infra-orbital nerve in an operative case in which this branch alone was involved, Mayo plugged the foramen of exit with silver. The patient remained entirely well for seven years, when he had a few twinges of pain, and within a few months recurring attacks became rather severe. Osmic acid was then injected about the foramen of exit, and this gave relief for six weeks, when a recurrence of pain brought him again to the operating table. Incision showed that the silver plug, being too smooth to be firmly fixed, had come out of the canal and rested at the side of the opening. The nerve was as large as at the first operation. It was again removed by Thiersch's windlass method, and the opening plugged with a silver screw, using an ordinary screw driver for the purpose. This patient has had no pain since, now over a year. No patient with the screw inserted has complained of the nerve blocked, and some have been thus obstructed several years. In some cases, but not extending over so long a period, the inferior dental canal has been opened externally about the point where it passes from the ramus to the body of the bone, the nerve extracted, and the canal plugged with lead. Soft silver or amalgam could be used. In all cases Mayo removes the gustatory nerve, whether complained of or not, as he believes it is a possible source of reflex irritation on the branch causing the pain.

37. **Tendon Tissue Versus Catgut Ligatures.**—Senn is convinced that from a commercial, scientific, and practical point of view tendon tissue is destined to take the place of catgut in the armamentarium of the surgeon, and in the operating room of hospitals, both in military and civil practice.

39. **Bloodless Methods of Artificial Dilatation.**—Lewis claims that the advocates of the branching metallic dilators, especially the Bossi type, have not made out a case. All the branching instruments are complicated and composed of a very large number of parts. All are dangerous as carriers of infection, because all are difficult to clean. The great fault of all is that the intelligence of the operator has to pass through so much mechanism before it reaches the tissues. It is impossible, at the end of a complicated instrument worked by a finely threaded screw, to have any adequate idea of how much force is being exercised on the tissues of the os and cervix. Lewis says that the consistent and careful use of the bags, or, if more haste is demanded, the bimanual method, will overcome the rigidity about as quickly as the Bossi method, and always more safely.

40. **Bloody Methods of Rapid Dilatation.**—Holmes summarizes his views as follows: The adaptation of colpotomy and trachelotomy to obstetric surgery as vaginal Cesarean section is one of the greatest advances of recent times. Vaginal Cesarean section is almost indispensable in certain cases of true cervical rigidity. In the absence of complications, expectancy, aided by hystereurysis, should be precursors of the major operations. In the presence of grave contributory complications, as eclampsia, heart disease, etc., complicated by cervical rigidity, the operation is indicated. We do not know when so-called operable carcinomas of the cervic have metastatic involvement of adjacent glands. If the carcinoma, limited to the infravaginal cervix, has glandular metastases, then the radical vaginal Cesarean section is only a temporizing measure; at a later very early moment, removal of the glands is indicated, after the technic of Ries and Wertheim. Evident encroachment of the cancer into contiguous tissues should be held a contraindication to the radical vaginal procedure. Rarely will vaginal Cesarean section be the operation of election in fibroids blocking the pelvis in labor. The abdominal route probably will continue to be the method of choice. Eclampsia, *per se*, is not an indication for vaginal Cesarean section. If the cervix is uneffaced, or if it is rigid, then the operation becomes a clinical necessity. So far, the results in general have not been any better by this new procedure than by means of the manual method or Bossi dilators.

Vaginal Cesarean section, Holmes declares, is an irrational procedure in placenta prævia, and nearly so in premature detachment of the placenta. A placenta prævia with the placental site on the posterior wall, with a rigid os, in the absence of hemorrhage, might be an indication for vaginal Cesarean section. The most approved technic includes anterior and posterior incisions, version, immediate removal of the placenta, repair, with tamponade if necessary. Vaginal Cesarean section demands hospital facilities, if it is to be done rightly. The dangers of the operation are real, and comprise injuries to the bladder, tearing of the uterus, and hemorrhage, both from the incision and from uterine atony. Probably time will prove that dystocia in subsequent labors is directly due to cicatricial contractions of the scar, or that rupture of the uterus is a sequential accident.

41. **Surgical Anesthesias.**—After having given 14,380 anesthetics, Magaw has yet to see a death directly from the anesthetic. The ether open method has been the method of choice. She uses a four-ounce ether-can and fits an ordinary cork with a groove on either side into its mouth, fills one groove with absorbent cotton and lets it extend out of the

can about one inch. She usually fixes two cans, one with a large dropper, and uses it until the patient is fully under the anesthetic, and then changes to the other can with the small dropper, and continues its use during the operation. Patients usually walk into the operating-room and mount the table without assistance. All foreign bodies, such as artificial teeth and chewing gum are removed. The hands are fastened loosely across the chest with a wide gauze bandage, to prevent the arms falling over the sharp edges of the table, an accident which so often causes musculospiral paralysis. A pad of moistened cotton is placed over the eyes to protect them from the anesthetic. If, during the course of administration, some of the anesthetic should fall into the eye a few drops of castor-oil dropped into the conjunctival sac, will prevent the conjunctivitis that would otherwise follow.

Magaw claims that it is a mistake to think that the same elevation of the head will do for all patients. The anesthetist should elevate the chin to such a position as not to bend the neck too far back or approximate the jaw too near the sternum. Proper elevation of the head will relax all tissues of the neck and give more freedom in breathing. This, also, can be said of the jaw. Holding the jaw up and forward, and keeping it in position so that the patient gets the greatest amount of air possible, is an important feature in giving an anesthetic. While too much emphasis can not be laid on this necessary requisite in giving an anesthetic, all jaws can not be handled in the same manner. When a patient has removed a double set of artificial teeth, the tongue will often cleave to the roof of the mouth during the administration, and raising the jaws sets the gums so firmly together that most of the air is shut out, and this may not be noticed until the patient is cyanotic. Magaw has found, in this class of cases, that if the jaw is held but slightly up and forward, and the thumb of the same hand is inserted between the gums, thereby holding the tongue down, faulty respiration will be corected at once and the color restored. This is one of the instances where the holding up of the jaw too firmly can be overdone.

The inhaler used is the improved Esmarch, with two thicknesses of stockinet (frame boiled and stockinet changed after each patient). The dropper described is used, dropping as slowly and carefully in giving the ether as though it were chloroform, until the patient's face is flushed, and then a few layers of surgeon's gauze are added, and the ether is given a trifle faster until the patient is surgically etherized; then return is made to the same covering as at the start, and the regular drop continued throughout the operation. Many valuable suggestions are made by Magaw for which the reader is referred to the original article as it is impossible in the limited space at our disposal to make a fuller abstract than this.

Vermont Medical Monthly, Burlington.

December 15.

45 Medicine in Shakespeare. F. A. L. Lockhart, Montreal.
46 Treatment of Fractures. E. S. Allbee, Bellows Falls, Vt.
47 *A New Method of Staphylorrhaphy. C. D. Fillebrown, Boston.

47. **New Method of Staphylorrhaphy.**—Fillebrown believes that he has developed a method of operating for staphylorrhaphy which permits easy approximation and suturing of the palatal segments without the customary deep lateral incisions, and one which renders division of the muscles unnecessary. In principle this method consists in obtaining membranous flaps by splitting the soft palate into two layers and uniting the anterior or lingual portions across the fissure. The superficial incisions begin at a point somewhat in front of the apex of the fissure and extend to within a few lines of the posterior pillar. These incisions pass through the mucous membrane only and not through the entire thickness of the palate. They should curve outward, especially opposite the widest portion of the cleft. Having thus outlined the distal borders of the flaps, the knife is carried along the margins of the cleft in such a manner that the edges are split from the front almost to the pharyngeal edge of the soft palate. By carefully dissecting in the plane of the palate from the distal incisions inward so that the knife point will emerge in the split edge, two quadrangular flaps of mucous membrane are formed, preserving attachments for nutrition. After paring the edges of the noula, omitted in the splitting process, the flaps are drawn together across the cleft and sutured in the median line, with the opposing edges everted in order to bring two raw surfaces in contact. In order to guard against any opening through the velum the distal edges are secured to the raw surfaces by several sutures. In the course of healing these denuded parts granulate readily, leaving no dense scar tissue. In place of dividing muscles to insure immobility, fixation is accomplished by passing wires behind the palate from side to side, and securing them laterally by silver disks. This restricts all movement of the velum and sustains the pressure in swallowing, cleansing, etc. This method is adapted to the clefts of the soft palate only; but when the deformity extends into hard palate, it can be employed in conjunction with the usual method of closing anterior fissures.

The Ophthalmic Record, Chicago.

November.

48 Diaphanoscopy of the Eye. H. V. Würdemann, Milwaukee.
49 *Eyestrain and Crime. G. M. Case, Elmira, N. Y.
50 Observations on Due Perception. F. W. Eldridge-Green.
51 Double Rupture of the Sclera Due to the Blow of a Fist. E. A. Shumway, Philadelphia.
52 Two Cases of Intraocular Tumor in Which the Transilluminator was Misleading. G. F. Suker, Chicago.
53 Case of Misleading Alcohol Amblyopia with Consecutive Atrophy. F. A. Phillips, Chicago.
54 Corneal Lesions in Snow Blindness. G. L. Strader, Cheyenne, Wyo.
55 Apparent Cure of a Case of Spring Catarrh. H. Gradle, Chicago.

49.—See THE JOURNAL, Sept. 22, 1906, page 960.

The Laryngoscope, St. Louis, Mo.

November.

56 Bernhard Fraenkel, Biography. A. Kuttner, Berlin.
57 American Exhibit in Berlin, in Honor of the 70th Birthday of Profesor Bernhard Fraenkel. E. Mayer, New York.
58 Teaching of Laryngology, Then and Now. C. H. Knight, New York.
59 *An Original Research on the Cause of Vocal Nodules. F. E. Miller, New York.
60 Submucous Resection Operation on the Nasal Septum. J. C. Beck, Chicago.
61 Results of Operation on the Nasal Septum and Means of Various Incisions. J. F. Barnhill, Indianapolis.
62 Treatment of Perforations of the Nasal Septum. M. A. Goldstein, St. Louis.
63 Teaching of Laryngology in the Harvard Medical School. H. P. Mosher, Boston.
64 Teaching of Laryngology and Rhinology in the Medical Department of the George Washington University, Washington, D. C. C. W. Richardson, Washington, D. C.
65 Method of Teaching Laryngology in the Jefferson Medical College. D. B. Kyle, Philadelphia.
66 Teaching of Laryngology and Rhinology in the New York University, University and Bellevue Hospital Medical College. C. G. Coakley, New York.
67 Teaching of Laryngology in Johns Hopkins University. J. N. Mackenzie, Baltimore.
68 Teaching of Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine of the University of Illinois. W. L. Ballenger, Chicago.
69 Teaching of Laryngology and Rhinology in the Denver and Gross College of Medicine. R. Levy, Denver, Colo.
70 Teaching of Laryngology in the Medical Department of St. Louis University. W. M. C. Bryan, St. Louis.

59. **Id.**—July 21, 1906, page 230.

Illinois Medical Journal, Springfield.

November.

71 *Medical Coöperation in Surgery of the Prostate. C. E. Black, Jacksonville.
72 Present Status of the Bottini Operation for the Relief of Prostatic Obstruction. F. Kreissl, Chicago.
73 Suprapubic Versus Perineal Prostatectomy. W. T. Belfield, Chicago.
74 Contribution to the Surgery of the Prostate. M. R. Barker, Chicago.
75 Macroscopic Agglutination of the Typhoid Bacilli as a Diagnostic Test for the General Practitioner. A. M. Stober, Chicago.
76 *Treatment of the Opium Habit. G. F. Butler, Chicago.
77 Intestinal Disorders of Childhood Accompanied with Diarrhea. J. C. Cook, Chicago.
78 Uses of Citrate of Soda in Infant Feeding. J. W. Van Derslice, Chicago.
79 Sociologic Duty of a Medical Society to Its Members. A. B. Keyes, Chicago.
80 Commercial Electricity and Its Dangers. G. de Tarnowsky, Chicago.
81 Partial Inferior Turbinectomy as Performed with Myles' Nasal Forceps. J. M. Bick, Chicago.

71. **Id.**—June 23, 1906, page 1965.

76. **Id.**—June 9, 1906, page 1787.

Pennsylvania Medical Journal, Athens.

November.

82 *Address on Medicine. D. W. Jeffries, Chester.
83 *Some Causes of Inefficiency in Medical Practice. J. B. Roberts, Philadelphia.
84 New Features of the United States Pharmacopeia of 1900. A. Koenig, Pittsburg.
85 Cleft Palate. H. R. Wharton, Philadelphia.
86 Photographic Illustrations in Modern Medical and Surgical Literature. C. B. Longenecker, Philadelphia.
87 Irregular Regular in Public and Hospital Practice. J. Price, Philadelphia.
88 Case of Conjoined Twins Complicating Labor in a Patient with Multiple Uterine Fibromata, with Exhibition of Specimens. C. E. Ziegler, Pittsburg.
89 Value of the Roentgen Rays as a Therapeutic Agent. G. E. Pfahler, Philadelphia.
90 Results in Roentgen Therapy. C. L. Leonard, Philadelphia.
91 Roentgen Diagnosis in Gastroenterostomy. H. Hulst, Grand Rapids, Mich.

82, 83. Id.—Oct. 13, 1906, page 1220.

Yale Medical Journal, New Haven, Conn.

November.

92 Community of Interest of Medical School and Public. W. W. Keen, Philadelphia.
93 Address at Annual Banquet of Connecticut State Medical Society, Hartford, Conn., May, 1906. Oliver C. C. Smith.
94 Data on Proteid Metabolism. J. L. Buttner, New York.

December.

95 Serum Therapy, General Considerations. D. M. Lewis, New Haven.
96 Serum Treatment in Non-Bacterial Diseases. N. R. Hotchkiss, New Haven.
97 Recent Advances in Treatment of Bacterial Diseases. C. Engelke, Waterbury, Conn.

Interstate Medical Journal, St. Louis, Mo.

December.

98 Critical Analysis of the Expert Testimony in the Jack the Stabber Case. S. I. Schwab, St. Louis.
99 Practical Use of the Roentgen Ray in Examinations of the Chest. W. S. Newcomet, Philadelphia.
100 Healing by Faith. J. M. Bradley, St. Louis.

The Medical Fortnightly, St. Louis.

December 25.

101 Foreign Bodies in the Larynx and Tracheobronchial Tract. L. D. Brose, Evansville, Ind.
102 Some Faults of Physicians and Druggists. L. H. Behrens, St. Louis.
103 The United States Pharmacopeia. H. M. Whelpley, St. Louis.
104 The National Formulary and Its Elegant Preparations (with Exhibit of Preparations). F. Hemm, St. Louis.
105 The Prescribing of Proprietary Remedies. J. C. Falk, St. Louis.

The Post-Graduate, New York.

December.

106 Gastric Ulcer, Gastroenterostomy. E. W. Peterson, New York.
107 Surgical Treatment of Malignant Disease of the Stomach. R. T. Morris, New York.
108 Medical Treatment of Malignant Disease of the Stomach. M. Einhorn, New York.
109 Symptomatology and Diagnosis of Cancer of the Stomach. J. E. Mackenty, New York.
110 A New Gas-Ether Inhaler. H. D. Furniss, New York.
111 Indication for Forceps in Obstructed Labor. F. A. Dorman, New York.
112 Tropical Malaria. P. Horowitz, New York.

Iowa Medical Journal, Des Moines.

December 15.

113 Report of Chairman, Section on Surgery, Iowa State Medical Society. C. S. James, Centerville.
114 Prostatic Hypertrophy. A. J. Burge, Iowa City.
115 Car Wheel Injuries of the Extremities. F. M. Tombaugh, Burlington.
116 Treatment of Fracture of the Shaft of Femur. F. H. Hornibrook, Cherokee.
117 Unusual Injury to Penis. W. G. Morton, Marshalltown.
118 Diseases of the Biliary Tract. A. M. Pond, Dubuque.
119 The Medical Pretender and Impostor. J. F. Kennedy, Des Moines.
120 Medical and Surgical Progress. G. Cullen, Des Moines.

Northwest Medicine, Seattle, Wash.

December.

121 Puerperal Eclampsia. J. H. Lyons, Seattle.
122 Head Injuries and Indications for Surgical Interference. H. Power, Spokane.
123 Uterine Retroversion and Its Treatment. C. N. Suttner, Walla Walla.
124 Interdependence of Diagnosis and Treatment in Abdominal Diseases. R. C. Coffey, Portland, Ore.
125 Treatment of Amebic Dysentery. R. J. Smith, Smithfield, Utah.

Maryland Medical Journal, Baltimore.

December.

126 An Explosive Epidemic of Water-Borne Typhoid Fever. W. R. Stokes and M. L. Price, Baltimore.

Therapeutic Gazette, Detroit.

December 15.

127 Treatment of Hypertrophy of the Prostate. E. Fuller, New York.
128 Prostatic Hypertrophy. C. H. Chetwood, New York.
129 Indiscriminate Prostatectomy. E. Martin, Philadelphia.
130 Fifty Consecutive Cases of Perineal Prostatectomy Without a Death. H. H. Young, Baltimore.
131 Leucorrhea—Its Treatment. F. C. Hammond, Philadelphia.
132 Cactus Grandiflorus. L. E. Sayre, Kansas City.
133 Treatment of Tuberculosis in Early Life. J. P. C. Griffith, Philadelphia.

Colorado Medicine, Denver.

December.

134 Mastoiditis in Chronic Suppurative Otitis Media. W. C. Bane, Denver.
135 Drop Method of Administering Ether. C. G. Parsons, Denver.
136 Fumigation of Private Houses After Contagious Diseases. H. R. McGraw, Denver.

American Practitioner and News, Louisville.

December.

137 The Epileptic. T. P. Satterwhite, Louisville.
138 Diagnosis and Treatment of Kidney Stone. J. R. Wathen, Louisville.
139 Cystitis. J. M. Schleicher, Seattle, Wash.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

December 1.

140 Gastric Ulcer. M. C. Millet, Rochester.
141 The Medical Expert Witness. J. W. Andrews, Mankato.
142 Modern Therapy of Syphilis. S. E. Sweitzer, Minneapolis.
143 Some Features of Osteomyelitis. A. R. Colvin, St. Paul.

California State Journal of Medicine, San Francisco.

December.

144 Pronated Foot and Its Clinical Significance. S. T. Pope, Watsonville.
145 Diet in Disease. G. K. Abbott, Loma Linda.
146 Wilful Deception in a Case of Hysteria. E. W. Twitchell, Sacramento.
147 Report of the Seventeenth and Eighteenth Cases of Coccidioidal Granuloma. P. K. Brown, San Francisco.

Medical Examiner and Practitioner, New York.

December.

148 Early Recognition of Predisposition To Tuberculosis. F. Martins, Berlin.
149 Early Recognition of Predisposition to Tuberculosis, Gottstein, Berlin.
150 Early Symptoms of Tuberculosis and How They May Be Developed when the Applicant Attempts to Conceal Them. W. Brinton, Philadelphia.
151 Examination of the Chest. W. B. Gossett, Louisville, Ky.
152 Diagnosis of Diseases of the Heart. P. F. Barbour, Louisville, Ky.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 15.

1 *Cancer, and Its Treatment by Modern Methods. E. Owen.
2 Acute Septic Peritonitis. C. J. Bond.
3 *Appendicitis; Points in Diagnosis and Treatment Based on Over 600 Operations. H. A. Bruce.
4 Intestinal Obstruction in Association with the Appendix. G. G. Turner.
5 Valves of the Iliac Vein. J. P. McMurrich.
6 Arteriolæ Rectæ of the Mammalian Kidney. G. C. Huber.
7 Morphology of the Urinferous Tubule of the Reptilian Kidney. G. C. Huber.
8 Mechanical Supports of the Pelvic Viscera. A. M. Paterson.
9 Preliminary Communication on Some Features of the Brain and Skull in Mongolism. D. Waterston.
10 Morphology of the Hip Joint. G. J. Jenkins.
11 Experiments on the Developing Ear Vesicle of the Tadpole. G. L. Streeter.
12 Development of Ova of the Toad Fertilized by Spermatozoa Which Have Been Exposed to the Roentgen Rays. C. B. Bardeen.
13 Development of the Nerve Elements in Vertebrates. R. G. Harrison.
14 Early Development of *Geomys bursarius*. T. G. Lee.
15 Development of the Stria Vascularis. C. E. Shambaugh.
16 Chromaffine Characters of Certain Parietal Cells of the Stomach. B. C. H. Harvey.
17 *An Unusual Peritoneal Anomaly Simulating Retroperitoneal Hernia. B. C. H. Harvey.
18 A Symelian Monster (Sympus Dipus). R. J. Gladstone.
19 Case of Innervation of the Nervus Lateralis Oculi by the Nervus Oculo-Motorius, with Absence of the Nervus Abducens. B. C. H. Harvey.
20 *The Appendix in Relation to Pelvic Inflammation. T. A. Helme.
21 *Antistreptococcus Serum in Puerperal Fever. M. Cameron.
22 *Early Diagnosis of Infectious Diseases by the Recognition of the General Involvement of the Lymphatic Glandular System. A. E. Vipond.

23 Plague Procedure in Hong Kong. J. M. Atkinson.
24 Prevention of Tuberculosis. S. G. Dixon.

The Lancet, London.

December 15.

25 *Cancer, Its Treatment by Modern Methods. E. Owen.
26 Observations on Paralyses of the Brachial Plexus. W. B. Warrington and R. Jones.
27 Water Gas, Carburetted Water Gas, and Carbon Monoxid Poisoning. J. Glaister.
28 Cases of Acute Leukemia Admitted into St. George's Hospital Between 1895 and 1905. L. B. Bailey.
29 *Case of Sprue Treated by Strawberries. M. F. Squire.

1 and 25. **Cancer.**—As is indicated in the title, Owens' paper is a general review of the present-day treatment of cancer, but his opening statement is a significant one. He says that in the present state of medical and surgical knowledge and experience, the only way in which the cure of a cancer can be attained is by its prompt and thorough removal by operation; and when a surgeon has made up his mind that a growth is malignant, and that it can and ought to be removed, he should lose no time.

3. **Appendicitis.**—Bruce emphasizes the point that the temperature and pulse are not to be relied on in the diagnosis of appendicitis, as in many severe cases there is very little elevation of temperature and little increase in the pulse rate. In all his acute cases there was rigidity of the right rectus muscle; in more than one-half the cases there was vomiting; and in practically all there was nausea. He insists on the necessity of very early operation in all cases of acute appendicitis. The paper closes with the report of 14 cases, some typical ones, others showing conditions closely simulating appendicitis.

17. **Unusual Peritoneal Anomaly Simulating Retroperitoneal Hernia.**—In the case reported by Harvey the position of the radix mesenterii was occupied by a fold of peritoneum with a free edge directed toward the left. This fold extended from above downward and to the right, and was continuous with the peritoneum on the posterior abdominal wall above, about the origin of the superior mesenteric artery, and below, along a line 3 cm. in length from the right margin of the body of the fifth lumbar vertebra to the brim of the pelvis. Between these extremities the fold was unattached, and behind its free border was an entrance toward the right into a large pouch containing all the small intestine. This pouch was bounded anteriorly by a double layer of peritoneum, being the continuation to the right of the fold above mentioned. On the right it was bounded by the attachment of this double layer to the posterior abdominal wall just at the medial side of the ascending colon. It was bounded behind by the peritoneum of the posterior abdominal wall. The duodenum did not cross the middle line, but entered this pouch from above and became continuous with the jejunum, remaining entirely on the right side.

20. **Appendix in Relation to Pelvic Inflammation.**—Helme summarizes his paper as follows: 1. The association of appendicular and pelvic disease is due to contiguity rather than continuity of structure. 2. The accidental inward direction or pelvic position of the appendix is the chief factor in this association. 3. The appendix or the pelvic organs may provide the primary source of disease. 4. Appendicitis is a frequent source of dysmenorrhea and its associated mucous colitis. 5. The association of appendicitis with pelvic disease is the exception and not the rule. 6. The appendix is not a vestigial structure but a highly differentiated portion of the intestinal tract and plays an important part in intestinal digestion. 7. The systematic removal of the appendix during laparotomy for pelvic disease in the absence of evident disease is not justifiable.

21. **Antistreptococcus Serum in Puerperal Fever.**—Cameron cites the histories of two patients who, he is convinced, would have died from puerperal fever had he not resorted to the use of antistreptococcic serum.

22. **Early Diagnosis of Infectious Diseases.**—Vipond makes it a practice to examine the lymph nodes in every child who suffers from elevation of temperature or other signs of acute illness without any local condition to account for the general symptoms. His findings lead him to draw the following conclusions: 1. The nodes are enlarged in infectious diseases. 2. They are enlarged some days before the development of the disease. He has found them to be enlarged and tender seven days before the rash of measles appeared. 3. The enlargement is most marked between the ages of from 3 to 18 years. 4. The enlargement is not produced by the irritation of the rash, but is due to the absorption of the poison or toxin. 5. As a rule nursing infants do not contract infectious diseases readily, as the tonsils are small and inactive. 6. The tendency to contract infectious disease is much lessened if the mouth and tonsils are in a healthy condition. 7. The enlargement of the nodes is more marked in certain infectious diseases than in others. For instance, they are larger in erysipelas, measles and rubella than in scarlet fever and whooping-cough. 8. They resolve more quickly in diphtheria under the influence of antitoxin than they do in measles and erysipelas. 9. In all infectious diseases (except those of local inoculation) the poison most likely enters the system through the tonsils. 10. Suppuration does not take place in the nodes unless we are dealing with a mixed infection.

29. **Sprue Treated by Strawberries.**—In the case reported by Squire, the patient, a boy aged 3 years, was ordered a strict milk diet, given frequently in small quantities, amounting to three pints a day and later increased to four pints, which seemed to be about as much as he could digest. He soon began to improve, the diarrhea diminished perceptibly, and after a fortnight the stools were not more than one or two a day; they were more formed, though still clay-colored and very offensive. The bared patches on the tongue healed and the patient seemed better in every way. By the middle of August the stools were not more frequent than one a day and were generally normal in appearance, though still rather offensive. The patient was of a gluttonous nature and difficult to manage as regards diet; he became very restive under the treatment and after much grumbling his diet was increased by the addition of bread and milk and subsequently bread and butter and an egg; but soon afterward his stools returned to their previously gray liquid and yeasty state, he rapidly lost flesh, and the ulcers reappeared on the tongue. He was again put on a strict milk diet with a similar result as regards the improvement, the grumbling as he got stronger, and the relapse on increasing the diet. Different drugs and food were tried, but with only temporary benefit. Finally Squire ordered one pound of strawberries a day in addition to the diet the patient was then taking. He began to improve at once, and the daily ration of strawberries was doubled until the patient made a complete recovery.

Medical Press and Circular, London and Dublin.

November 21.

30 *Medicinal and Dietetic Treatment of Catarrhs of the Bladder and Pelvis of the Kidney. C. Edelssen.
31 A Plea for the Study of the Intermedio-Lateral Tract of the Spinal Cord. A. Bruce and J. H. H. Pirie.
32 Case of Ovarian Cystoma in Which Thyroid Tissue Occurred. J. H. Swanton.
33 Medical Treatment of Uterine Hemorrhage. S. J. Aarons.

November 28.

34 *Dechloridation Treatment in Cardiac and Renal Disease. F. Widal.
35 Treatment of Diabetes with Secretin. J. R. Charles.
36 Appendico-Enterostomy. S. Pringle.

December 5.

37 Post-Traumatic Neuroses. T. G. Moorhead.
38 Cerebral Syphilis. H. Dardenne.
39 Causation and Treatment of Some Headaches. W. Harris.

December 12.

40 Cholelithiasis. W. Taylor.
41 *Two Cases of Esophageal Stricture. T. K. Monro and A. N. McGregor.
42 Tuberculous Ulceration of the Tongue. A. Wylie and W. Wingrave.
43 The Mouth as a Focus of Infection. F. Norman.

30. **Catarrh of Bladder.**—Although not opposed to the local treatment of vesical catarrh, Edelssen is of the opinion that it should be used in those cases only in which internal treatment fails. It should not be undertaken without necessity, and physicians, he states, would be much less frequently placed in a position of being obliged to wash out the bladder if they more frequently made use of the old, tried remedies for cystitis. For washing out, the milder remedies will generally be sufficient, and especially the 3 per cent. solution of chlorate of potash recommended by Boegehold; silver nitrate will only be

necessary in rare cases. Boric acid and resorcin, both in 2 to 3 per cent. solution, have also proved very useful. Washing out with permanganate of potash is not without danger, as the possibility is not quite excluded that the sediment caused may not in part adhere to the mucous surface of the bladder; and occasionally it may give origin to a concrement.

34. **Dechloridation.**—Widal says that it is not claimed for the dechloridation treatment that it can avert all the accidents to which the victims of chronic renal disease are liable, but it enables us to combat and to avert certain formidable complications which *per se* may cause the patient's death. In the subjects of chlorid retention there are two distinct indications: one is to rid the organism of the chlorid and water that clog the organism, the second is to draw up a regimen in which the quantity of chlorid ingested is proportioned to the permeability of the kidney for the salt.

41. **Esophageal Stricture.**—Monro and McGregor report one case each of malignant and cicatricial stricture of the esophagus treated successfully by gastrostomy.

The Clinical Journal, London.

November 21.

44 Varicose Veins. C. B. Lockwood.
45 *Head-Rolling and Other Curious Movements in Children. G. F. Still.
46 Peritonitis in Children. H. S. Clogg.

November 28.

47 *Cases Illustrating the Surgery of the Spleen. D. Power.
48 High Arterial Tension and Some of Its Consequences. L. Williams.
49 Some Complications of Tuberculous Infection of the Lymphatic Glands in Children. T. Fisher.

December 5.

50 Some Aspects of Drunkenness. C. Mercier.
51 *Early Recognition of Cancer of the Rectum and Its Treatment. D. Drew.
52 High Arterial Tension and Some of Its Consequences. L. Williams.

December 12.

53 Malignant Endocarditis. J. R. Bradford.
54 Case of Functional Hemiplegia. C. O. Hawthorne.

45. **Head Rolling and Other Movements in Children.**—Still discusses head rolling, head banging, head nodding and body rocking. He says that the first point to be determined in treatment is the underlying cause; it may be possible to relieve a middle-ear catarrh; it may be advisable to give some drug, perhaps even in very rare cases to lance the gums to relieve the worry of dentition, but often it is impossible to find any cause, and we are driven to treat the symptoms.

47. **Surgery of Spleen.**—Power reports one case of successful removal of an enlarged and displaced spleen in a woman, aged 42; another of removal of the spleen for primary sarcoma from a woman, aged 49, who died six months afterward; and a case of ruptured spleen, the patient being a boy 16 years old, in which the hemorrhage was checked by packing the rupture with thymol gauze. The patient was lost sight of. Another patient who was treated in a similar manner for rupture of the spleen died.

51. **Cancer of Rectum.**—Drew lays stress on the following: 1. The importance of recognizing the disease at the earliest opportunity, and that, until the cases are obtained early, the results of excision of the rectum can not be expected to show the improvement that improved technic in operating deserves. 2. That partial operations for cancer of the rectum should be abandoned, and that, just as in the breast, the earlier the disease the better is the chance of effecting a cure if a thorough operation is performed. 3. The importance of exploration by the abdomen in all cases in which cancer of the rectum is at all advanced before proceeding to excision.

Bulletin de l'Académie de Médecine, Paris.

Last indexed XLVII, page 2041.

55 (LXX, Nos. 38-40, Pp. 391-478.) Focus of Bacillary Dysentery in well-to-do Paris Family. F. Widal. (Foyer de dysentérie mortelle. Contagion probable par des tissus exotiques.)
56 *Cancer of the Tongue and Its Relation to Syphilis. Discussion. (Curabilité du cancer et traitement du cancer de la langue en particulier.)
57 Processes of Destruction and Repair in Caries of the Teeth. Coyne. (Réactions odontoclasique et odontoblastique au cours des infections dentaires.)
58 Aging of Vaccine Pulp. Kelsch and Tanon. (Vieillissement de la pulpe vaccinale.)

56. **Curability of Cancer and of Cancer of the Tongue in Particular.**—Berger states that the mortality has been 50 per cent. or more in his cases of cancer of the tongue in which he obtained access to the tumor through the lower jaw. When he operated by merely enlarging the orifice of the mouth, the mortality was only about 33 per cent. He reported the case of a woman cured for ten years to date after ablation of an epithelioma of the tongue, a man cured for the same length of time, 2 other men cured for six years, besides a number of others operated on more recently. He regards as absolute contraindications to operation extension of the cancer back to the base of the tongue and toward the epiglottis, involvement of the pillars, or tonsil, adhesions between the jaw and the ulceration or tumor, also the cases in which both halves of the tongue are involved beyond the horizontal portion or even the front part, and, finally, those in which the glands show inflammatory enlargement. When only one side of the tongue is involved he has never witnessed recurrence in the glands on the opposite side, and consequently he removes the glands on the affected side alone. In the discussion of the subject, Cornil and Hallopeau urged the importance of uniformity in classifying cancers, and pointed out the greater malignity of tumors of the same variety in different locations. Hallopeau has frequently noticed that leucoplasia developing in a syphilitic seems to behave like what he calls a "deuteropathy," and is refractory to mercurial treatment, but that the syphiloma which initiates the leucoplasia is amenable to local measures as a rule, no matter how frequently it recurs. He generally cauterizes it with acid nitrate of mercury which transforms the syphiloma into an ordinary sore that soon heals. If too extensive for this treatment, he has his patients take from 15 to 20 tablets a day containing each 0.001 gm. of corrosive sublimate. As the tablet dissolves slowly in the mouth it keeps the lesion constantly bathed with the mercurial fluid. This has both a local and a general action. Potassium iodid may be given with it and the mouth cleansed with a soap containing sodium salicylate.

Fournier expatiated on this new iniquity traced to syphilis, its participation in the production of cancer of the tongue. He cited a case of cancer of the tongue in a syphilitic woman who had never smoked tobacco. Another argument in favor of incriminating syphilis is the fact that cancer of the tongue is extremely rare in non-syphilitic smokers. One of his patients was a man who had been an incessant smoker for thirty years without any lesion presenting in the mouth. Then he contracted syphilis and two years later exhibited severe leucoplasia of the tongue. Cancer very seldom develops on a healthy tongue; there is always an intermediary lesion—the leucoplasia. He declares that syphilis is almost always curable, while the parasyphilitic affections, of which the most serious are tabes, general paralysis and cancerogenic leucoplasia, are almost inevitably incurable. The full realization of this fact, he says, should revolutionize rational preventive treatment of syphilis. Rational treatment should aim to prevent the development of the parasyphilitic affections. In 184 cases of cancer of the mouth in his private practice, 155 of the patients had an unquestionable history of syphilis and no special inquiry was made as to syphilitic antecedents in the others. Even excluding the latter group as all free from syphilis, this leaves a proportion of from 84 to 96 per cent. syphilitic patients in his and in others'—non-specialists—experience.

Presse Médicale, Paris.

59 (XIV, No. 92, pp. 729-740.) History of Urinary Diseases. Albarran. (Maladies des voies Urinaires.)
60 *Life of Semmelweis—History of Puerperal Fever. Pinard. (Ignace Philippe Semmelweis.)
61 Localization of Motor Aphasia. J. Dejerine. (Localisation de l'aphasie motrice.)
62 Pathologic Anatomy and Pathogenesis of Arteriosclerosis. O Josué. (L'artério-sclérose.)
63 *Plastic-orthopedic Improvement in Technic of Amputation of Arm. A. Cecl. (Amputations cinéplastiques des membres supérieurs.)

60. **History of Puerperal Fever.**—Pinard points to Semmelweis' career as another example of the baneful influence of dogma in medicine and the frequently retrograde force of the scholastic spirit, while observation should dominate everything else in medicine. He states that Semmelweis wrote to the Paris Académie des Sciences in 1849 setting forth his views

in regard to the prevention of puerperal fever, but no notice was taken of his communication. In 1851 a Vienna obstetrician sent a report of Semmelweis' work to the Académie de Médecine. It was referred to a committee, and nothing further was heard from it there, although the article was published in full in the *Annales d'hygiène publique*, XLV. The subject of the prevention of puerperal fever finally came up in the Académie in 1858, and the discussion was carried through eighteen sessions without further result than the final conclusion that lying-in hospitals should be suppressed. Tarnier recognized the truth in Semmelweis' views, but he was unable to convince others, and it was not until fifteen years later that he was able to realize them in practice, when he assumed charge of the Maternity in 1870. The mortality dropped at once from nearly 10 to 2.32 per cent.

63. Improved Technic for Amputation of Arm.—Ceci states that an Italian general practitioner, G. Vanghetti, has been proclaiming the advantages of retaining the tendons to make a ring below the stump after amputation of the arm. This ring serves as a hold for the artificial arm or hand, enabling much better control. Ceci has applied the idea in 3 cases, modifying the technic suggested by Vanghetti, which had been worked out on poultry, but following his principle of "cinematic prothesis," "plastic amputation" or "plastic-orthopedic amputation," as it has been variously called. The illustrations accompanying the article show three patients thus operated on. In the first case a single ring was formed of the tendons and muscles, covered with skin, the lumen of the ring forming a tunnel through the stump of the arm below the end of the bone. Cords passed through this ring and fastened to the artificial hand allow a lamp to be grasped firmly, an axe to be used, etc. In another case two rings were made at right angles, and heavy weights are shown in the illustration suspended from these "traction rings." The tendons and muscles are left in their normal relations so far as possible. The technical details are described at length.

Semaine Médicale, Paris.

64 (XXVI, No. 49, Pp. 577-588.) Insignificant Results to Date of Vaccination Against Tuberculosis. G. Moussu. (Le bilan actuel de la vaccination antituberculeuse.)

Dermatologische Zeitschrift, Lassar's, Berlin.

Last indexed XLVII, page 1772.

65 (XIII, No. 6, Pp. 393-460.) Topography of Spirochetes in Papule. S. Ehrmann. (Zur Top. der Spirochaete pallida in der krustös werdenden Papel.)
66 Spirochæta pallida. F. R. N. Berger.
67 *Aspiration Treatment of Chronic Gonorrhea. H. Strebel. (Aspirationsbehandlung der chron. Gon.)
68 Technic of Roentgen Treatment. L. Görl. (Technisches zur R.-Therap.)
69 Lassar's Zinc Paste in Veterinary Medicine. Goldbeck (Zink-Paste in der Veterinär.-Med.)
70 Anatomic Changes in Skin with Neurotic Disease of Sweat Glands. W. A. Nestorowsky. (An. Veränderungen der Haut bei Dysidrosis.) Commenced in No. 3.
71 Prostitution in Poland in the XV Century. J. Lachs. (Krakauer Prostitutionswesen im XV Jahrundert.)
72 (No. 7, Pp. 461-536.) Total Whitening of the Nails. S. Bettmann. (Leukonychia totalis.)
73 Multiple Cutaneous Myomata. C. Gutmann. (Dermatomyome.)
74 Xeroderma pigmentosum (Kaposi). O. Löw.
75 (No. 8, Pp. 537-612.) Giant Papilloma on the Genitalia. N. E. Aronstam. (Pap. giganticum der Genitalien.)
76 *Hemorrhage from Female Genitalia in Syphilis. A. Dreyer. (Blutungen aus den weibl. Genitalien bei Syph.)
77 Isolated Pemphigus of the Mucosæ. F. Callomon. ("Isol." Pemphigus der Schleimhäute.)
78 Biology of Heredity and Its Importance for Research on Syphilis. F. B. Solger. (Zur Biologie der Vererbung.)
79 Experimental Syphilis, the Pale Spirochete and Other Kinds of Spirochetes. E. Hoffmann. (Exp. Syph., Spirochæta pallida und andere Spir.-Arten.)
80 Aspiration Treatment of Gonorrheal Urethritis. T. Mayer. (Asp.-Therap. gonorrhoischer Urethritiden.) See abstract 67.
81 (No. 9, Pp. 613-676.) Rare Nail Disease. J. Heller. (Zur Kasuistik seltener Nagelerkrankung.)
82 Bibliography on Spirochæta Pallida. H. Hübner.

67. Aspiration Treatment of Chronic Gonorrhea.—Strebel uses a catheter, closed at the end, but with numerous large openings, connected with a strong aspirating syringe or vacuum pump. The lining of the urethra is sucked into the openings of the catheter, and the secretions in the glands are aspirated by the strong negative pressure. After air has been let into the urethra again the secretions are readily rinsed out. This suction of the secretions is proving especially useful in prostatitis and in gonorrhea of long standing. The vacuum treatment has further the advantage that it induces intense hyperemia in the parts. It is possible to obtain results with it like those from Oberländer's dilatation, laceration of the mucosa and bleeding. This hyperemia and solution of continuity have frequently induced a pronounced curative reaction with absorption of infiltrations. He has found that the curative action is promoted by first pricking the infiltrations with a fine needle. This opens passages into the glands and allows accumulated pus to be sucked out by the following aspiration. Strebel has been using this aspiration treatment of chronic gonorrhea for more than a year, with most excellent results, even with home-made instruments, but now a Leipsic firm has produced instruments which he says ideally answer the purpose. Mayer of Lassar's clinic reports in No. 8 equally favorable results from a somewhat similar technic.

76. Syphilitic Genital Hemorrhage.—Dreyer remarks that he has not been able to find in the German literature any reference to bleeding of syphilitic origin from the female genitalia. He summarizes 14 cases from French, Italian and Russian journals. In 2 instances the ovaries were removed as a last resort to arrest the hemorrhages. These uselessly mutilating operations served a good purpose, however, as they gave the clue for correct treatment in further experiences of the same kind. In 2 other cases the success of mercurial treatment was the only basis for the assumption of a syphilitic etiology. Enlargement of the ovaries was probably responsible for the bleeding in most of the cases; they subsided to normal size under mercurial treatment. The hemorrhages occurred almost exclusively during the tertiary period. The only exceptions were in a case of inherited syphilis and in his personal case in which they occurred during the secondary stage.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

83 (XXXII, No. 47, Pp. 1888-1936.) Acute, Anterior Poliomyelitis. W. Erb.
84 Angiosclerotic Disturbances in the Legs: Intermittent Claudication, etc. W. Erb. ("Intermittierendes Hinken," etc.)
85 *The Heart in Case of Goiter. F. Kraus. (Kropfherz.)
86 *Treatment of Gastric Ulcer. A. Schmidt. (Behandlung des Magengeschwürs.)
87 What Influence Have Roentgen Procedures Exerted on the Physician's Conduct in Cases of Fractures of Bones? F. König. (R.- Verfahren bei Knochenbrüchen.)
88 Physician's Certificate in Regard to Influence on Earning Capacity of Reduction of Visual Acuity. H. Schmidt-Rimpler. (Zur ärztlichen Begutachtung, etc.)
89 Test for Heterologous Albumin in Blood by Deviation of Complement not Practicable for General Use. Ganghofner and Langer. (Verwertbarkeit des Phänomens der Komplementablenkung zum Nachweise von artfremden Eiweiss im Blute.)
90 *Box for Sending Specimens of Feces for Examination. I. Boas. (Eine portative Stuhlschale (Koproskop) für Untersuchungszwecke.)

85. The Heart in Case of Goiter.—Kraus reviews the various cardiac disturbances liable to occur with goiter, especially the cardiovascular syndrome induced by abnormal functioning of the thyroid gland with the coöperation of the nerves controlling the heart action. According to his experience, both clinical and experimental, defective thyroid functioning is not necessarily attended by heart disturbances, certainly not progressive ones. Even the cretins are liable to have hearts that behave comparatively normally and are relatively of normal size. Excessive functioning of the thyroid gland entails the clinical pictures of exophthalmic goiter, "basedowified goiter," "thyreotoxic goiter heart," and artificially induced thyroidism. He thinks that the symptoms in these conditions are probably due to the action on the sympathetic system of the products generated in excess in the thyroid gland. The organism is flooded with these substances, and they have a peculiar affinity for the sympathetic nerve. He discusses a number of problems in regard to the "goiter heart" and the action of thyroid treatment, insisting especially on the difference between the action of thyroid preparations on the metabolism in myxedema and in exophthalmic goiter, on the nitrogen metabolism in particular. Those whom he calls "vasomotor indviduals" are affected much more readily with cardiovascular disturbances under thyroid treatment than normal persons. This individual factor and the special conditions of the action of the thyroid preparations require further study. In differentiating between

the mild "secondary" cases of exophthalmic goiter and the serious "primary" cases, it is important to learn whether dyspnea was an initial symptom. Enlargement of the heart, especially of the right heart, suggests the secondary form. Cyanosis, signs of compression of the air passages, the visible findings in the throat, and the subjective symptoms are important as revealing dyspnea in its incipient stages. He does not accept Moebius' conception that the goiter disturbances form a chain commencing with simple goiter and ending in typical exophthalmic goiter—on the contrary, the facts indicate a considerable degree of independence between the various goiter syndromes. Typical exophthalmic goiter is rare in the countries where goiter is endemic. "Why," he asks, "does 'general thyroidism,' occurring in consequence of an ordinary goiter, cause such a comparatively mild syndrome in comparison with the extensive, progressive and serious syndrome of exophthalmic goiter? The cause for this must lie outside of the thyroid gland." Kocher has observed the typical syndrome of exophthalmic goiter develop in a patient without any apparent previous tendency, after removal of the thyroid gland. At the same time, it has been his repeated experience that the symptoms of exophthalmic goiter subside as the thyroid gland is resected.

86. **Treatment of Gastric Ulcer.**—Schmidt mentions among other points the importance of staying in bed.—It relieves the stomach from traction and pressure of other organs, rests the greater curvature and lifts the anterior wall of the stomach out of the stomach content. He insists on two or three weeks in bed. If there is any tendency to hemorrhage, the patient must avoid all unnecessary movement, even in bed. He applies moist heat, but advises suspension of the applications for an hour at frequent intervals, and sometimes substitutes the ice bag when patients are incommoded by the moist heat. The diet should be nourishing, but meat should be given cautiously. With a tendency to severe hemorrhage, nothing should be given by the mouth and the physician should supervise the alimentary rectal injections as, if left to lay hands, they are liable to be so made as to irritate the mucosa. Food given by the mouth should be ice-cold, milk, meat jelly, etc. In diagnosing stomach affections the possibility of perigastric adhesions must be constantly borne in mind.

90. **Box for Sending Specimens of Feces.**—The receptacles in which specimens of stools are sent for examination generally leak and are otherwise unsuited for the purpose. Boas has devised a small box that works well. It is shown in an illustration and consists of two Petri dishes, 10 cm. in diameter, fitting into each other, with a rubber rim to close the junction air-tight. Half of the lower dish is painted black to facilitate examination of light colored particles. The two dishes are held together with a broad rubber band. A small glass spatula, held in a slit on the rubber band, is used in transferring the specimen of feces to the lower dish, and also in the examination later. The broad, shallow dish allows the specimen to be dissolved in water or otherwise prepared for chemical tests or for the microscope. He loans the box to the patient, bidding him return it the next day with the specimen of stool, labeled with the name, or the patient can buy one for himself, the firm making the coproscopes selling them for about 45 cents each.

Münchener medizinische Wochenschrift.

91 (LIII, No. 46, Pp. 2233-2280.) Aërobic Cultivation of So-called Obligatory Anäerobic Bacteria. P. Harrass. (Aerobe Züchtung sogen. obligatanaerober Bakt.)
92 *Influence of the German Legislation in Regard to Accident Insurance on the Course of Nervous and Mental Affections. R. Gaupp. (Einfluss der deutschen Unfallgesetzgebung auf den Verlauf der Nerven-und Geisteskrankheiten.)
93 *Peripheral Trauma and Pulmonary Tuberculosis. P. Ewald. (Lungentub. und periph. Unfallverletzung.)
94 Instrument for Ligating Deep Vessels. A. Birch-Hirschfeld. (Ein neues Inst. zur Unterbindung tiefliegender Gefässe.)
95 Infantile Scurvy. E. Fraenkel. (Möller-Barlowsche Krankheit.)
96 Technic for Compulsory Notification and Disinfection in Infectious Diseases. F. Bohm. (Bekämpfung der Weiterverbreitung von Inf.-Kr. mittels Desinfektion.)
97 (No. 47, Pp. 2281-2328.) Diagnostic Importance of Typhoid Ulcerative Sore Throat. L. Blum. (Diag. Bedeutung der Angina ulcerativa typhosa.)
98 *Cumulative Action of Digitalis. M. Cloetta. (Kumulativwirkung der Dig.)
99 *Mechanism of Percussion Findings. F. Hamburger. (Oberflächenwirkung des Perkussionsstosses.)
100 *Experimental Study of Pneumonia After General Anesthesia. A. v. Lichtenberg. (Entstehung der Pneumonie nach Narkosen.)
101 *Cirrhosis of Pancreas. V. Schmieden. (Zirrhose des Pankreas.)
102 *Remarkable Results of Examination of the Blood in 4 Neurasthenics. T. Goett. (Blutuntersuchung bei Nervösen.)
103 Isolation in Small Hospitals. L. W. Weber. (Das Isolierzimmer.)
104 Transparent Screen for Recording Orthodiagraphic Findings. P. G. Franze. (Technik der Orthodiagraphie; eine durchsichtige Zeichenebene.)
105 Psychoneuroses as Result of Psycho-sexual Trauma. C. G. Jung. (Die Hysterielehre Freuds.)
106 Macroscopic Asthma Spirals. M. Riehl. (Makr. Asthmaspiralen.)

92. **Influence of Accident Insurance on the Course of Nervous and Mental Affections.**—Gaupp emphasizes the facts that the traumatic nervous affections do not differ from the familiar neuroses, and that the traumatic neuroses develop after accidents of the most diverse kinds. The recent legislation regulating indemnities, etc., after accidents has been followed by an increase in the number of traumatic neuroses, and by their longer persistence. He analyzes the reasons for this and the means of preventing it in future. Much depends on the physician at the time of the first examination. Great harm is done by suggesting an unfavorable prognosis or hinting at simulation without positive proof. The latter impels the patient to exaggerate. The physician is too frequently inclined to certify to entire loss of earning capacity to ease his conscience of responsibility. He forgets that it is beneath his dignity to be philanthropic at another's expense. The prospects of treatment of a traumatic neurosis after considerable time has elapsed are not promising, and, if it fails, the patient is merely confirmed in his pessimistic frame of mind. Even medical examination after six months is to be deprecated on account of the suggestion on the patient. Gaupp advocates the introduction into Germany of the plan of paying damages in a lump sum as early as possible. The present conditions, he declares, are absolutely unbearable.

93. **Pulmonary Tuberculosis and Peripheral Trauma.**—Ewald discusses a case in which a healthy young man had his finger crushed in a factory and was in the hospital for six weeks. Soon after his dismissal he developed symptoms of pulmonary tuberculosis, to which he succumbed a year or so later. He claimed indemnity from the accident insurance company, affirming that his lung trouble was the direct result of the peripheral injury, and the courts sustained his plea. The company had, therefore, to pay him full indemnity and to pension his widow. Ewald comments that this decision might be applied with equal force to all cases of internal affections which develop after a peripheral injury requiring hospital treatment. The accident insurance companies would have to go out of business, he adds, if this view should be generally adopted. Physicians should be very guarded in making probability out of possibility in their estimate of such cases, as so many factors contribute to the final outcome.

98. **Cumulative Action of Digitalis.**—Cloetta has been making an experimental study of the cumulative action of digitalis. It is not observed with the fresh leaves, and he ascribes it to changes in the leaves.

99. **Mechanism of Percussion Findings.**—Hamburger strives to explain by the aid of diagrams the various features that make up the mechanism of the percussion findings over the thorax. The surface element is particularly marked in children owing to the greater elasticity of the child's thorax. This leads to error in the findings as the child is apt to cling to its mother or to lie so that one side of the thorax rests against some object. This interferes with its excursions, and modifies the percussion findings. Erroneous findings may also result if the physician applies percussion, using his fingers on one side and the palm of his hand on the other side of the thorax to support the child, thus altering the conditions for the two sides.

100. **Experimental Study of Postoperative Pneumonia.**—Lichtenberg anesthetized 22 rabbits with chloroform and found that it invariably induced severe injury of the alveolar epithelium. The epithelium softens and is thrown off, and

there is hemorrhage into the alveoles. This plugs up the bronchioles and tiny atelectatic foci result, scattered throughout the lungs. These foci are sterile, but they afford places of minor resistance to arriving infection. Snel noted a great reduction in the immunity of individuals under the influence of general anesthesia and daily clinical experience shows the manifold possibilities for infection after general anesthesia. The injurious action of the chloroform on the lungs must be regarded as a serious complication, probably responsible for the majority of the cases of postoperative pulmonary disturbances, although the results of experiments on animals are not conclusive for man. The rabbits invariably developed lobular pneumonia within forty-eight hours, and the severity of the lung complication was proportional to the length of the anesthesia. The experiments as a whole certainly suggest that the chloroform is a more important factor in the production of postoperative pneumonia than has been realized hitherto.

101. **Cirrhosis of the Pancreas.**—Schmieden reports from Bier's clinic at Bonn, a case of cirrhosis of the pancreas causing puzzling symptoms and leading to great debility. An exploratory laparotomy cleared up the diagnosis and allowed appropriate treatment which restored the pa ient to health. A painful, nobby tumor corresponding to the head of the pancreas was accompanied by typical pancreas colic and pronounced delay in the glutoid test. The patient was a woman of 24 with healthy children. Three weeks after the birth of the last child the first attack of colic came on; the pain was more in the median line than in case of gallstone colic, and radiated in the back to the shoulder, especially on the right side, with paroxysmal sweating. The patient could not bear to have her clothes buttoned, and frequently was obliged to stay in bed for a day or so, and was unable to stoop. The pains had no connection with the taking of food, but vomiting occured two or three times a day, free from blood. All the organs except the pancreas were normal on palpation. The response to Sahli's glutoid capsules did not appear for twenty-one hours, showing abnormal delay. There was no fever; neither was there albumin or sugar in the urine. An exploratory laparotomy revealed the pancreas nobby and enlarged, and embedded in old, leathery, adhesions. A wedge-shaped piece was cut out of the head of the pancreas and a lymph node was also excised. No evidences of fat necrosis were discernible and the abdomen was sutured. The patient was treated with a pancreatic preparation and potassium iodid and soon recovered completely. The microscope revealed typical, severe cirrhosis of the pancreas, free from any tendency to tumor formation. Another woman presented absolutely the same clinical picture only the cachexia was less marked, but the microscope revealed alveolar carcinoma.

102. **Examination of the Blood of Neurasthenics.**—Goett mentions that in four young men with pronounced neurasthenic symptoms he found the proportion of hemoglobin from 82 to 100 per cent., while the reds numbered two and a half millions in each case. He presents arguments in favor of the assumption that the unstable nervous system allowed comparatively slight excitement to act excessively on the vasomotor center, with dilatation of the capillaries as the result, followed by diminished blood pressure. The pressure of the fluids outside of the capillaries then was greater than that within, and tissue fluids entered the capillaries and diluted the blood. He warns that examination of the blood of nervous individuals must always be done with great circumspection, and that the possible changes in the composition of the blood must not be accepted as necessarily an index of actual pathologic conditions.

Hospitalstidende, Copenhagen.

Last indexed XLVII, page 2129.

107 (XLIX, Nos. 35-39, Pp. 957-1080.) Influenza. V. Ellermann.
108 *Treatment of Hemorrhagic Gastric Ulcer. F. Vermehren. (Behandlingen af det blødende Mavesaar.)
109 *Edema without Albuminuria in the Course of Infantile Intestinal Catarrh. A. H. Meyer. (Edemer uden Alb. ved Tarmkatar hos Børn.)
110 (Nos. 40-42, Pp. 1081-1156.) Paratyfus. V. Ellermann.
111 Early Diagnosis of Tuberculosis. M. Brammer. (Om tidlig Diag. at Tub., og om Anvendelse af diagnostike Tuberkulin.
112 (Nos. 43-44, Pp. 1157-1204.) Identification. K. Pontoppidan. (Identificering.)
113 *Hyperacid Stomach Content and Gastric Ulcer. V. Rubow. (Mavesaarets Patologi og Terapi.)
114 *Connection Between Affections of Nose and Eyes. E. Schmiegelow. (Forholdet mellem Sygdomme i Næsen og Øjet.)
115 (No. 45, Pp. 1205-1228.) Chemical Rays in Treatment of Internal Affections. K. A. Hasselbach. (Det kemiske Lysbads Anvendelse mod indre Sygdomme.)

108. **Diagnosis of Bleeding Gastric Ulcer.**—Vermehren states that a positive response to the test for occult blood can be expected only when at least 3 c.c. of blood are mixed with the feces under examination, if derived from above the pylorus. If the blood comes from a point lower down, a smaller amount will give a positive response. In 30 cases, Vermehren has tried Lenhartz' dietetic treatment of bleeding ulcer while 8 other patients were treated according to von Leube's more sparing diet. In 2 patients he was convinced of simulation from the constant absence of melena and of traces of occult blood in the feces after the alleged hemorrhage from the stomach. Another patient was a hard drinker. His hematemesis and melena were not accompanied by any signs of ascites, enlargement of spleen or stasis in the portal or venæ cavæ, and a hemorrhagic gastric ulcer was diagnosed by exclusion. He rapidly recuperated under the Lenhartz cure, but at his death from an intercurrent pneumonia later no signs of ulcer could be discovered. The hematemesis was traced to a ruptured varix in the esophagus. As a rule, the effects of the Lenhartz diet were most excellent. When there was little if any anemia the patients were allowed to get up on the thirtieth day, and 13 could be dismissed between the thirty-fourth and forty-fourth day. Anemic patients were kept in bed until the blood picture approximated normal. The after-history of the patients showed that the cure was complete. In only 5 cases was it found necessary to modify Lenhartz' directions. In one of these the gastric ulcer and a considerable degree of hour-glass contraction must have existed for eight years, without causing symptoms after the first few months. The ulcer was in the lesser curvature. The feces had shown blood but none had ever been found in the vomitus. This absence of blood in the vomitus in case of an unmistakable hemorrhagic ulcer should suggest the possibility of hour-glass contraction of the stomach. This case further shows the way in which anemia can be induced by hemorrhages imperceptible to the eye. In 27 days the hemoglobin dropped from normal to 85. The benefits of the test for occult hemorrhage were particularly striking in this case, as the positive findings were accepted as an indication for operative intervention. Raising the foot of the bed aids in combating the subjective symptoms of anemia, supplemented at need with bandaging of the legs. He was obliged to resort to these measures, with stimulants, saline infusion, etc., in only one case. The severest hemorrhage may stop spontaneously, and on the other hand, in case of persisting hemorrhage, the physician should not allow the moment for successful operative intervention to pass. The decision is most difficult in the moderately severe cases. Recent examination of 13 of his patients showed 10 still completely cured, 3 with slight dyspeptic symptoms, while 1 had a slight hematemesis not long after dismissal. In 4 of the 10 completely cured patients, the previous duration of the stomach affection was from 5 to 20 years. The 3 patients with recurrence had presented symptoms before treatment for 10 years, 2 years, and 3 months, respectively. As a rule, the best results are obtained in the more recent cases. There is now a record of 48 patients re-examined some time after a Lenhartz course of treatment, and 36, or 75 per cent., were found cured, while there had been recurrence in 12 cases, including 3 with hematemesis. These results encourage the further application of the Lenhartz principle of a more strengthening diet in case of gastric ulcer, using abundance of white of egg. Impending perforation is an absolute contraindication. Lenhartz regards the cases of recurring hemorrhage as giving the best prognosis under this diet, but Vermehren does not follow him so far, believing that the stomach should be kept quiet while the hematemesis persists and is recurring.

109. **Edema without Albuminuria in Case of Infantile Intestinal Catarrh.**—During the course of a subacute catarrh of the intestines in a child of 2, edema developed in the eyelids,

hands, arms, legs, etc., with cyanosis of the lower parts. Study of the metabolism in this and similar cases suggests the necessity for avoiding administration of salt in the food and refraining from saline infusion or rectal injection during the course of intestinal catarrh complicated with edema.

113. **Hyperacid Stomach Content and Diagnosis of Ulcer.**—Rubow refers to the finding of a hyperacid and abundant stomach content as pathognomonic for chronic gastric ulcer. He then presents evidence to show that if the amount of stomach content is small, even although it may be extremely acid, yet this can not be accepted as a sign of hypersecretion of acid. It indicates merely excessive motor functioning on the part of the stomach. Examining the stomach content of patients presenting this symptom of hyperacid but very small amount of stomach content, 45 minutes after an Ewald test meal, he found that the acidity of the stomach content was no higher than with normal conditions of stomach digestion. The motor function of the stomach, however, was exaggerated, and its contents were evacuated abnormally rapidly. Even a small amount of acid, secreted between the forty-fifth and sixtieth minutes after the test meal, would render extremely acid the small amount of stomach content remaining in the stomach, while it would have little effect on the amount of content normally in the stomach at this time. The small, hyperacid stomach content can not be regarded, therefore, as any indication of an anomaly in secretion, but only in the motor function.

114. **Connection Between Nose and Eye Affections.**—Schmiegelow reports 2 cases of retrobulbar optic neuritis developing secondary to sphenoidal or ethmoidal sinusitis.

Archivio per le Scienze Mediche, Turin.

Last indexed XLVII, page 2130.

116 (XXX, No. 2, Pp. 113-216.) Biologic Significance of Plastin. F. Michell. (Significato biol. della plastelna.)
117 Resistance of Anthrax Spores. Changes Induced by Passage from Mother to Fetus. S. Sirena. (Resistenza delle spore del bacillo del carbonchio.)
118 *Hemorrhagic Infarct in Liver. G. Sotti. (Infarto emorragico del fegato.)

118. **Hemorrhagic Infarct in the Liver.**—Sotti summarizes the accessible literature on this subject, written both from the clinical and experimental standpoint. Few cases present the dual alteration of the portal vein and hepatic arteries which we have a right to expect from the results of experiments on animals. In a case personally observed the various factors were united, causing occlusion of both the portal vein and hepatic artery. The occlusion of the vein was not total and had evidently preceded the occlusion of the hepatic artery, as was indicated by the tunneling of some of the thrombi. The thrombosis of the hepatic artery was due to the grave condition of the heart and lungs, favored by an obliterating endarteritis in the branches of the hepatic artery. The special features of the circulation through the liver and the possibility of compensating circulation outside the liver, explain why hemorrhagic infarct in this organ may manifest itself both macroscopically and microscopically in an entirely different manner from the clinical picture observed when hemorrhagic infarct occurs in any other organ. The patient in the case reported was a woman of 67 and the liver was not enlarged.

Gazzetta degli Ospedali, Milan.

Last indexed XLVII, page 2178.

119 (XXVII, Nos. 126-132, Pp. 1331-1400.) The Blood in Influenza. G. Carli. (Ricerche ematologiche nell' influenza.)
120 *Ligature of the Popliteal Vein for Varicose Ulcers. U. Dall'Acqua. (Legatura della vena poplitea nelle varici.)
121 *Serum Treatment of Syphilis. A. Risso and A. Cipollina. (Risultati ottenuti col nostro siero antisifilitico.)
122 *Ovarian Organ Therapy in Treatment of Vomiting of Pregnancy. G. Stella. (Nuova teoria sulla patogenesi e sulla cura dell' hyperemesis gravidarum.)
123 Bacilli Carriers in Etiology of Typhoid. D. Falcioni. (Il microbismo latente nella etiologia della febbre tifoidea.)
124 Atropin in Ileus. E. Lupino. (Atropina nell' occlusione intestinale.)
125 *Sign of Defect in Interventricular Septum. L. Giuffré. (Caso di morbo di Roger e nuovo segno dell' apertura del setto intervent.)
126 Favorable Results from Treatment of Erysipelas with Diphtheria Antitoxin Applied Locally and by Subcutaneous Injection. M. Chiadini. (Cura dell'erisipela col siero antidift.)
127 Permanent Cure of Six Cases of Incontinence of Urine with Suprarenal Extract by the Mouth. G. Zanoni. (Casi di incontinenza essenziale d'orina, guariti radicalmente colla opoterapie surrenale.)
128 *Specific Treatment of Tuberculosis. S. Bernheim. (A proposito della Tulase di von Behring.)
129 (Nos. 134-141, Pp. 1417-1496.) Agglutinating Power of Blood Serum in Influenza. G. Ghedini. (L'attivita agglutinante del siero di sangue degli influenzati sul bacillo di Pfeiffer.)
130 *Specific Precipitins in Nephritis. E. Tedeschi. (Nuovo contributo alla patologia delle nefriti.)
131 Origin in Endothelium of Mononuclear Leucocytes. V. Patella. (Genesi endoteliare dei leucociti mononucleati del sangue.)
132 *Influence of Artificially Induced Hyperemia on Pathologic Tendency of the Appendix. L. Mattioli. (Influenza della stasi artificialmente provocata su eventuali predisposizioni all' insorgenza di processi anatomo-patologici nell' app.)
133 Pseudotyphoid and Paratyphoid Fever. L. Lucatello. (Pseudotifoidi e tifosimili.)
134 Differential Importance of Spirochetes in Extragenital Syphilides. F. Simonelli. (Spirochaete pallida nella diagnosi della sifilide extra-gen.)
135 *Intestinal Helminths and Typhoid Fever. G. Quadri. (Ascaridiasi e febbre tifoidea.)
136 *Roentgen Treatment and Leukemia. V. Maragliano. (Roentgenterapia e leucemia.)

120. **Ligature of Popliteal Vein for Varices.**—Dall'Acqua has been investigating the remote results in 19 patients in whom the popliteal vein had been ligated for leg ulcers. His total experience includes a much larger number and considerable research on the cadaver and experiments on animals. The ultimate outcome depends on whether or not the vein develops a new main trunk, in which case recurrence is inevitable. As it is impossible to determine the nature of the collaterals beforehand, the results of the method are no better, on the whole, than those of other technics, although in the really appropriate cases it seems to be ideal.

121. **Serum Treatment of Syphilis.**—Rossi and Cipollina review their total experience with serum treatment of 50 syphilitic patients to date. Among the striking examples of its curative action is the case of a man with gummatous osteoperiostitis of the skull with extensive necrosis and a purulent discharge. The process had persisted for three years, notwithstanding general and local mercurial treatment. Under serum treatment the lesion gradually healed; the patient gained nearly 13 pounds in weight, and the bone reformed over nearly the entire surface, only a small space remaining to date still unossified. Marked improvement, they state, was also obtained in cases of early tabes, the lancinating pains vanishing and the general condition showing great benefit.

122. **Ovarian Therapy of Vomiting of Pregnancy.**—Stella presents arguments to sustain his assumption that the uncontrollable vomiting of pregnancy is the result of insufficient functioning of the ovaries. He has treated patients with ovarian extract, and the results, he says, have realized his anticipations. He thinks that there is a field for ovarian opotherapy in the prevention of severe vomiting in pregnancy, not waiting until it is the last resort but whenever the nausea and vomiting seem inclined to become serious.

125. **Sign of Defect of the Interventricular Septum.**—Giuffré discusses the various features of a case of heart trouble from a probably congenital opening in the interventricular septum. There was no disturbance from it until after a serious accident to the patient which probably enlarged the opening. The sign to which he calls attention is a modification of the interventricular murmur during Valsalva's experiment. In health a deep inspiration followed by a strong expiratory effort with the mouth and nose closed, increasing the intrathoracic pressure, causes the pulse and the heart sounds to become weaker or scarcely perceptible. In case of a defect in the septum the blood is able to flow back from the right into the left ventricle and the arteries continue to pulsate during Valsalva's experiment as under normal conditions. The systolic murmur, instead of growing weaker becomes louder, and is heard over a broader area. The re-enforcement of the systolic murmur during Valsalva's experiment may thus be regarded, he claims, as a new and important specific sign of a defect in the interventricular septum.

128. **Specific Treatment of Tuberculosis.**—Maragliano announces in reply to numerous inquiries that his specific "bac-

teriolysin" is not a commercial product. (An account of it was published in THE JOURNAL, Dec. 8, 1906, page 1965.) He is ready to give it to physicians on demand under two strict conditions, namely, that the physician sends with his application the case history of the patient to whom he intends to administer it, and, further, promises formally to send in a report of the results observed.

130. **Pathology of Nephritis.**—Tedeschi reports the results of extensive experimental research which have shown that injection of rabbits with small and repeated doses of serum from individuals with nephritis affects the animals differently from injection of normal serum. The disturbances are most pronounced when the serum is derived from individuals with what he calls the dyscrasic form of nephritis, that is, those in whom the metabolism is most intensely and profoundly altered in consequence of their kidney trouble. He has further demonstrated the presence of specific precipitins in the serum of rabbits treated with serum from chronic nephritics, especially the dyscrasic, and these precipitins were never found in the serum of rabbits treated with serum from persons with acute nephritis, nor in the chronic cases except those of dyscrasic type.

132. **Influence of Artificially Induced Hyperemia on Predisposition to Appendicitis.**—Mattioli cites Edebohls' statement that he found appendicitis in the history of 90 per cent. of 135 women with movable right kidney. Mattioli's own experience shows a similar connection between movable kidney, with its inevitable disturbance in the circulation of the region, and the incidence of appendicitis. He here relates a number of experiments on rabbits, producing atresia or occlusion of the veins connected with the appendix. The results indicated that interference with the circulation induces changes similar to those of appendicitis in man, and enhances the predisposition of the appendix to infectious processes.

135. **Helminthiasis and Typhoid Fever.**—Quadri relates the details of 3 cases in which the patients expelled a number of ascarides during the course of typhoid. He believes that fever induces conditions unfavorable to helminths, but does not think that the worms alone are capable of inducing a syndrome suggesting typhoid. Their prolonged presence results in an accumulation of toxins and hemolysins which is liable to have a very debilitating action on the organism of the patient, reducing his resisting powers so that some occasional exaltation of the virulence of the intestinal flora may entail general infection. Vivaldi and Tonello found helminths in 80 per cent. of 50 patients with typhoid; in 42 per cent. of 50 persons with various other affections, and in 32 per cent. of 25 healthy persons, while in nearly every case of chlorosis the eggs of the ascaris were found in great numbers.

136. **Roentgen Treatment and Leukemia.**—Maragliano calls attention to the prompt subsidence of the enlarged glands at a distance from the parts exposed in a case of typical splenomedullary leukemia with much enlargement of the glands. The spleen and the glands in the neck were exposed, not the bones nor the inguinal glands, and yet the latter glands retrogressed parallel with the retrogression of the exposed glands in the neck. This occurred before the favorable action of the *x*-rays on the blood had become manifest. The great benefit in this case has persisted unmodified for a year and a half to date. He thinks that this experience suggests the possibility of influencing leukemia more rapidly than has been thought practicable hitherto, by exposing larger areas, especially the neck, where glands are so numerous, or the liver, which is so abundantly supplied with blood, in addition to exposure of the spleen. Even if the glands in the neck show no pathologic changes, yet exposure of this region may be directly curative owing to the distant action of the *x*-rays. This may activate the curative processes by a kind of auto-serotherapy. He advises eliminating the non-penetrating rays, which have no curative action while they are liable to affect the skin injuriously. He accomplishes this by filtering the rays through diachylon, generally four layers, which adhere to the skin and shut out the injurious rays entirely. This allows more copious use of the really curative rays, freed from the danger of injury to the skin.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ANATOMY, PHYSIOLOGY, PATHOLOGY, DICTIONARY. Edited by W. A. Evans, M.S., M.D., A. Gehrmann, M.D., and W. Healy, A.B., M.D, Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, under the editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. IX. Series 1906. Price, $1.25. Chicago: The Year-Book Publishers.

DISEASES OF THE STOMACH AND INTESTINES, with an Account of Their Relations to Other Diseases and of the Most Recent Methods Applicable to the Diagnosis and Treatment of Them in General. By B. Reed, M.D. Second Edition. Cloth. Pp. 1021. Price, $5.00. New York: E. B. Treat & Co., 1907.

TUMORS, INNOCENT AND MALIGNANT, Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital, etc. Fourth Edition. Cloth. Pp. 675. Price, $5.00. Chicago: W. T. Keener & Co.

A GUIDE TO DISEASES OF THE NOSE AND THROAT AND THEIR TREATMENT. By C. A. Parker, F.R.C.S., Surgeon to the Throat Hospital, Golden Square, W., with 255 Illustrations. Cloth. Pp. 624. Price, $5.00 net. New York: Longmans, Green & Co., 1906.

HISTORY OF THE NEW HAMPSHIRE SURGEONS IN THE WAR OF THE REBELLION. By C. P. Conn, A.M., M.D., Published by Order of the New Hampshire Association of Military Surgeons, 1906. Cloth. Pp. 558. Concord, N. H.: Ira C. Evans Co., Printers.

TOXINS AND VENOMS, and Their Antibodies. By Em. Pozzi-Escot. Authorized Translation by A. I. Cohn, Phar. D. First Edition. Cloth. Pp. 101. Price, $1.00 net. New York: John Wiley & Sons, 1906.

TRANSACTIONS OF THE INDIANA STATE MEDICAL ASSOCIATION, 1906. Fifty-seventh Annual Session, held at Winona Lake, Indiana, May 23-25, 1906. Cloth. Pp. 586. Indianapolis: W. B. Burford, Printer, 1905.

NEW PATENTS.

Recent patents of interest to physicians:

836175 Invalids' couch. John W. Bess, Brilliant, Ohio.
836367 Hypodermic syringe. Henry J. Detmers, Columbus, Ohio.
836442 Atomizer. Edward C. Dunning, Providence, R. I.
836397 Invalid bed. W. C. McGough, Wilmerding, Pa.
836266 Corn and bunion cutter. Kuno Meis, Hoboken, N. J.
836523 Pocket inhaler. Calvin P. Moore, Akron, Ohio.
836334 Bed-pan. Isidore Newman, New York.
836603 Surgical instrument. Ernest J. Osgood, Oakland, Cal.
836414 Machine for making plaster-of-Paris bandages. Justin K. Toles, Chicago.
836914 Menthol compound. Rudolph Berendes, Elberfeld, Germany.
837196 Ear-drum, Frank E. Coulter, Sioux Falls, S. Dak.
837224 Medicine case. John L. Holcomb, Brown, O. T.
837083 Manufacture of glycolic acid. Otta Liebknecht, Frankfort-on-the-Main, Germany.
837085 Vaginal syringe. George C. Loar, Ottumwa, Iowa.
837094 Sterilizer. Harold A. Miller, Pittsburg, Pa.
836889 Invalids' bed. Alice M. Parkhill, Chicago.
836781 Obtaining lithium salts. Camille Poulenc, Paris, France.
836726 Invalids' rest. John D. Wilson, Columbus, Ohio.
837171 Apparatus for administering anesthetics. Henry W. Wolfe, Baltimore.
837276 Sanitary belt buckle. Rose F. Bennett, Boston.
837378 Manufacturing boric acid. Otto Best, Daggett, Cal.
837459 Vaginal irrigator. Charles O. Farrington and T. Watson, Sealy, Texas.
837368 Apparatus for indicating defective eyesight. John J. Wood, Liverpool, England.
838383 Surgeons' needle holder. H. H. Clark, Santa Cruz, Cal.
838390 Water-purifying apparatus. Albert E. Dieterich, Washington, D. C.
838096 Massage machine. Christian G. Fenstermacher, Philadelphia.
838409 Liquid sterilizer. Daniel L. Holden, New York.
838334 Colotomy truss. E. E. Hyatt, Birkenshaw, near Bradford, Eng.
837947 Combined water-bag syringe and colonic irrigator. John W. McDowell, St. Louis.
837949 Thermometer case. M. D. McKichan, Doncaster, Ontario, Canada.
838434 Respirator. James Morgan, Randfontein, Transvaal.
837979 Massage machine. George F. Trotter, St. Louis.
837993 Surgical instrument. T. W. Williams, Milwaukee, Wis.
838769 Formation of a lithophone having a sulfite of baryta base. Leon Brunet, Brionde, France.
838950 Therapeutic Lamp. Harley E. Conger, Minneapolis, and J. B. Marshall, Chicago.
838959 Massage and manicure machine. Omar C. De Selms, Attica, Ind.
838960 Atomizer. Fairleigh S. Dickinson, New York.
839085 Atomizer and like instrument. Frank C. Dorment, Kalamazoo, Mich.
838527 Sanitary hair brush. Robert J. Ellis, San Francisco.
838779 Artificial leg. Gustaf A. Erickson, Minneapolis.
838969 Closure for ether-receptacles and the like. Robert H. Ferguson, East Orange, N. J.